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NORTH ATLANTIC REGIONAL WATER RESOURCES STUDY. APPENDIX S. LEGA--ETC(U)
MAY 72 T M HENRY, P H SHAW

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North Atlantic Regional Water Resources Study

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Appendix S
Legal and Institutional Environment

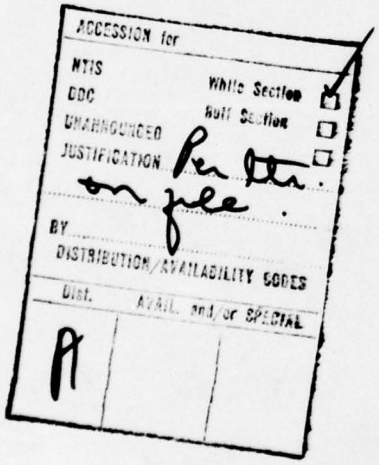
Thornton M./Henry/Peter H./Shaw

The North Atlantic Regional Water Resources (NAR) Study examined a wide variety of water and related land resources, needs and devices in formulating a broad, coordinated program to guide future resource development and management in the North Atlantic Region. The Study was authorized by the 1965 Water Resources Planning Act (PL 89-80) and the 1965 Flood Control Act (PL 89-298), and carried out under guidelines set by the Water Resources Council.

The recommended program and alternatives developed for the North Atlantic Region were prepared under the direction of the NAR Study Coordinating Committee, a partnership of resource planners representing some 25 Federal, regional and State agencies. The NAR Study Report presents this program and the alternatives as a framework for future action based on a planning period running through 2020, with bench mark planning years of 1980 and 2000.

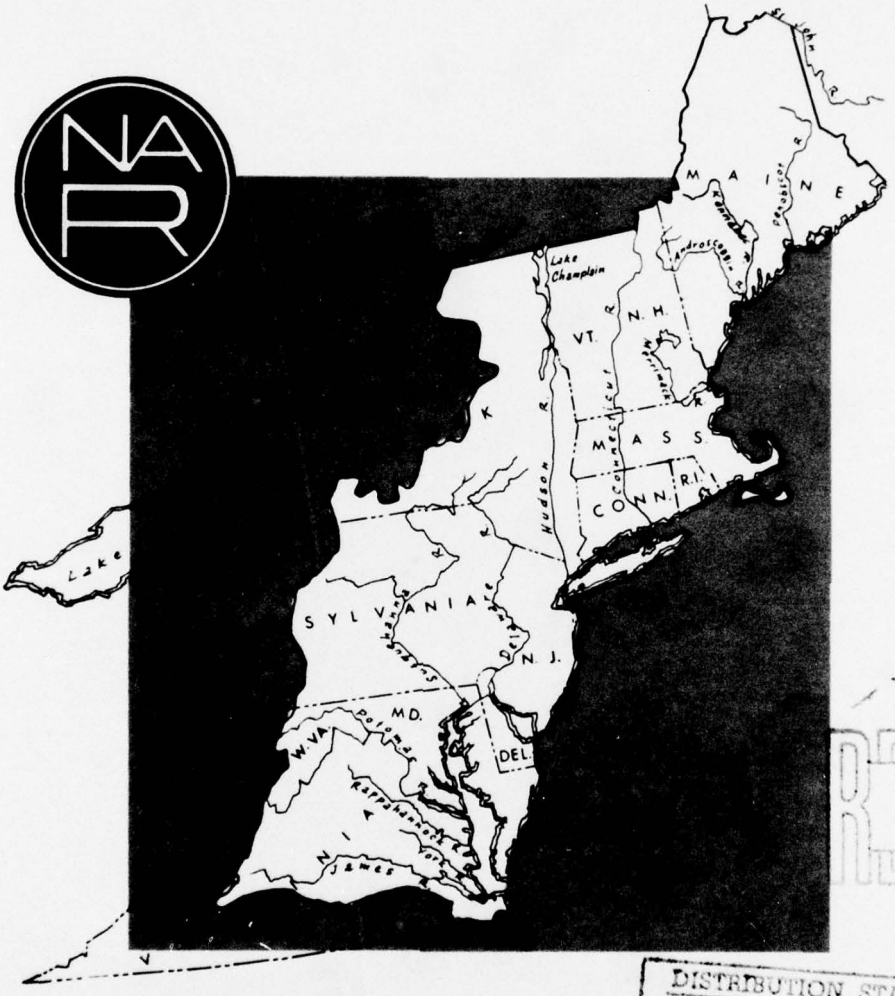
The planning partners focused on three major objectives -- National Income, Regional Development and Environmental Quality -- in developing and documenting the information which decision-makers will need for managing water and related land resources in the interest of the people of the North Atlantic Region.

In addition to the NAR Study Main Report and Annexes, there are the following 22 Appendices:



A. History of Study
B. Economic Base
C. Climate, Meteorology and Hydrology
D. Geology and Ground Water
E. Flood Damage Reduction and Water Management for Major Rivers and Coastal Areas
F. Upstream Flood Prevention and Water Management
G. Land Use and Management
H. Minerals
I. Irrigation
J. Land Drainage
K. Navigation
L. Water Quality and Pollution
M. Outdoor Recreation
N. Visual and Cultural Environment
O. Fish and Wildlife
P. Power
Q. Erosion and Sedimentation
R. Water Supply
S. Legal and Institutional Environment
T. Plan Formulation
U. Coastal and Estuarine Areas
V. Health Aspects

Appendix S
Legal and Institutional Environment



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Prepared by

Representatives of the Thirteen NAR States and the District of Columbia

and the

North Atlantic Regional Study Group
North Atlantic Division, Corps of Engineers

for the

NORTH ATLANTIC REGIONAL WATER RESOURCES STUDY
COORDINATING COMMITTEE

APPENDIX S

LEGAL AND INSTITUTIONAL ENVIRONMENT

CONTENTS:

	Page No.
PART I - FEDERAL LAWS, POLICIES AND PROGRAMS	S-1

Prepared by the NAR Study Group, PART I presents a brief synopsis of the Federal laws and institutional structures which affect the water and related land resources of the North Atlantic Region of the United States.

PART II - STATE LAWS, POLICIES AND PROGRAMS	S-61

PART II describes the laws and institutional structures of the thirteen NAR states and the District of Columbia which embrace water and related land resources. The individual reports were prepared by representatives of each of the NAR states and the District of Columbia, and were compiled and edited by the NAR Study Group.

PART III - INTERSTATE-FEDERAL COOPERATIVE BODIES	S-607

This section of Appendix S presents the basic characteristics of the various cooperative affiliations of state and Federal governments, existing or proposed, involved in the study of, control of, or planning for the development of water and related land resources in the NAR. PART III was prepared by the NAR Study Group with the assistance of the major organizations mentioned herein.

The NAR Study Group gratefully acknowledges the contributions of the various federal, state and interstate-federal organizations who assisted in the completion of Appendix S. The writing and editorial functions performed by the NAR Study Group were carried out by Cpt. Thornton M. Henry, lawyer, U.S. Army Corps of Engineers, and Mr. Peter H. Shaw, regional economist, Corps of Engineers, whose contributions are likewise acknowledged.

-a-

PART I

FEDERAL LAWS, POLICIES AND PROGRAMS

PART I
FEDERAL LAWS, POLICIES AND PROGRAMS
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INTRODUCTION

This section is a brief synopsis of laws and institutional structures on the Federal level, in the framework of which the North Atlantic Regional Water Resources Study was executed. Since this is an area of study of potentially enormous scope and complexity, not to mention being in a period of transition and rapid change, certain limitations should be noted.

It will be seen that the basic orientation of this summary is toward institutions and their activities with regard to water and related land resources, rather than toward laws as such. Although the relevant statutes are mentioned, the description is of the powers and functions they authorize, rather than of the statutes, litigation, and other points of law themselves. In the final analysis, the water resource planner must deal, not with laws, but with the agencies that embody and execute them. Neither codification nor intense analysis of laws or institutions was intended, or undertaken, both being beyond the scope of this Appendix.

Furthermore, the division of this summary is principally by agency rather than by water resource activity or function, both for the above practical reason, and for simple expositional convenience: water resource activity categories are comparatively few in number, broad in nature, and not perfectly defined. The various agencies have responsibilities which overlap in many ways; the form of presentation used here, it is hoped, will minimize tedious repetition. A table is used to cross-reference agencies and activities.

Only those Federal agencies and interstate bodies are considered whose interests and responsibilities concerning water and related land resources fall within the geographic area of the North Atlantic Region, and the discussion is confined to those functions of such agencies which are exercised within the Region.

Finally, it should be carefully noted that significant institutional reorganizations have occurred on the Federal level, and even more sweeping changes are under consideration. The Environmental Protection Agency, an independent body established by Reorganization Plan No. 3 of December 2, 1970, absorbed agencies and functions from three Cabinet Departments and three independent Federal organizations, most importantly the Federal Water Quality Administration. Reorganization Plan No. 4 of October 2, 1970, created the National Oceanic and Atmospheric Administration within the Department of Commerce, consolidating the Environmental Science Services Administration and elements of the Fish and Wildlife Service and the Bureau of Mines, among other agencies. The creation of these two new entities represents a major restructuring of the Federal water establishment.

Even greater reorganizations are under active consideration. As reported in the New York Times on January 11, 1971, four new Cabinet Departments would be created by reassigning agencies and functions from the existing Departments, and from certain independent agencies. A Department of Community Development would subsume the present Department of Housing and Urban Development and elements of the Office of Economic Opportunity. A Department of Economic Development would merge the Departments of Commerce and Labor, and possibly other agencies that deal with the development of economic resources. A Department of Human Resources would be an internal reorganization of the Department of Health, Education, and Welfare. Finally, and possibly of greatest relevance to the NAR Study, there would be a Department of Natural Resources, merging the Department of the Interior with some of the land-use and land-management functions of the Department of Agriculture (for instance, the latter's Forest Service would be combined with the Interior Department's National Park Service).

Another innovation which may see future enactment is large-scale revenue sharing by the Federal government, as proposed by the President in his state-of-the-union address of January 22, 1971. This would be a combination of grants tied to specific, albeit broad, purposes, and completely untied grants, to state and local governments. Given the growing popular interest in ecology and the environment, such a revenue-sharing scheme could bear importantly on non-Federal development of water and related land resources.

As of the beginning of 1972, the above sweeping changes have not advanced beyond the stage of proposal; it is evident, however, that laws and institutions on the Federal level for the management of water and related land resources are in a state of flux and will continue to be, at least for the near future.

LEGAL BACKGROUND OF FEDERAL WATER RESOURCE DEVELOPMENT

GENERAL (5)*

The concept and substance of a Federal responsibility for comprehensive development of the Nation's water and related land resources is embodied in legislative enactments over the years under the commerce and welfare clauses of the Constitution, and the gradual growth of a body of policy by repeated authorization of specific types of projects. The fundamental objective of the Congress in authorizing Federal participation in resource development is to insure that the Nation's resources make an optimum contribution to the health and welfare of its people. But at the same time, the Congress seeks to maintain a reasonable balance between the powers and responsibilities assumed by the Federal Government and those to be left with the states, local governmental entities, and private enterprise. Many of the laws which Congress has enacted with a view to achieving these objectives permit the Federal agencies to exercise latitude in developing plans which must be specifically authorized by Act of Congress before they may be carried out. While it is highly desirable that such latitude be available to the planning agencies, it also presents them with a very difficult problem: that of recommending to the Congress, for each project or program planned, a division of responsibility between Federal and non-Federal entities which the Congress will accept as representing a reasonable balance between what the Federal Government should undertake and what should be left to the states and their subdivisions. It is for this reason that Federal agencies are so often confronted with the question of whether they should recommend that the Federal Government itself carry out a potential project which does not involve, or which involves in only a secondary way, one or more of the purposes for which the Congress has assumed full, or a high degree of, responsibility. To arrive at a reasonable answer to this question, it is necessary for the Federal agency concerned to give full and careful consideration to all available indicators of Congressional intent, as well as to the principles and policies specifically spelled out by the legislation authorizing the agency to propose projects and programs.

As indicated by the body of Federal water resources legislation, Congress has established generally that in participating in the conservation, development, and use of the Nation's water and related

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* A number in parentheses following a section heading indicates the reference in the bibliography relevant to that section.

land resources in the interests of furthering commerce and the public welfare, the Federal Government:

a. Should undertake only that which local levels of government, or private enterprise, cannot do as readily, or as well from the standpoint of the national interest;

b. May bear a part of the costs of projects and programs that benefit the nation as a whole, or are necessary to protect the interest of future generations, particularly in those fields in which profit-making organizations do not operate;

c. Should provide for the mitigation of any damaging effects of Federal projects, or carry out measures to compensate for such effects;

d. May, where special circumstances make such action necessary or desirable in the national interest, provide services which normally would be provided by private enterprise or non-Federal public entities; for example, when long-range financial returns are not sufficiently attractive in the short-range view of private enterprise, or when costs are included for purposes not readily marketable, or when problems of comprehensive and coordinated development cannot be readily resolved below the Federal level;

e. May construct certain works for which local interests will be willing to pay, or may provide subsidies, as by permitting repayment at low Federal interest rates;

f. May develop comprehensive plans embracing even those purposes for which a high degree of responsibility remains with non-Federal entities;

g. Should not consider all purposes to warrant equal or maximum Federal participation.

Acts of Congress, and interpretations thereof by the Supreme Court, clearly indicate that the Federal Government may accept some degree of responsibility for all aspects of water conservation, development, and use. It is also clear, however, that the degree of responsibility that may be accepted is not the same for all purposes; that it varies from a maximum degree for sound planning, to a lesser degree for construction, and to a still lesser degree for financing, operation and maintenance. More specifically, under existing legislation, the Federal Government may:

a. Act as the prime mover in, and accept a high degree of responsibility for carrying out, projects for navigation, irrigation, flood control, and shore protection;

b. In connection with projects to serve the above purposes, assume a lesser degree of responsibility for the generation of power, the provision of water supply, the control and improvement of water quality, the conservation and enhancement of the fish and wildlife resource, and the provision of opportunities for outdoor recreation.

In operating under the general principles and criteria outlined in the foregoing, it must be kept in mind that legislative policy is constantly changing. Originally, Congress limited the Federal Government to providing improvements for navigation. But gradually, and over a long period of years, it added irrigation, flood control, and shore protection to the fields in which the Federal Government would assume a high degree of responsibility; in Public Law 89-298, passed by Congress in 1965, a Federal interest was declared in the water supply of the northeastern United States. The general trend of legislation, therefore, is toward a broadening of the responsibilities accepted by the Congress, necessitating the fullest consideration of all potentials of river basins, and comprehensive planning considered best to meet the needs of the nation. However, when reporting officers conclude that the national interest warrants Federal assumption of responsibility going beyond that permissible under existing legislation, they will secure the approval of higher authority, in advance of completing plan formulation or of making information thereon available to outside interests, for any departures therefrom that they may consider necessary.

Federal planning is carried out on a coordinated basis from the earliest steps of investigation through the review process. A Federal agency initating an investigation or survey, arranges for appropriate coordination of problems of mutual concern with other agencies at Federal, state and local levels. Before a report is submitted to the President and the Congress, each department or independent agency interested in the project and the concerned states is provided with copies of the proposed report, and given an opportunity to furnish a statement concerning the project proposal from the viewpoint of its interest and responsibility. Such statements are included in the reports submitted by a sponsoring agency. If such statements propose variations from the policies and standards specified herein, the reasons for each variation shall be stated.

Planning by Federal agencies is also carried out in close cooperation with appropriate regional, state, or local planning and development and conservation agencies, to the end that regional, state, and local objectives may be accomplished to the greatest extent consistent with national objectives. When a proposed resource use or development affects the interest and responsibility of non-Federal public bodies, those bodies are furnished

information necessary to permit them to evaluate the physical, economic and social effects. Their views are sought, considered in preparation of reports, and included in the final reports submitted to the President and the Congress or other approving authority.

Federal assistance to states and local agencies is available in the form of grants, which are discussed in a separate paragraph in this section.

CONSTITUTIONAL (5)

The Constitution, laws, and treaties of the United States are the supreme law of the land. The judges in every state are bound thereby, anything in the constitution or laws of any state to the contrary notwithstanding. The powers of the Federal Government are limited to those expressly delegated or reasonably implied from the Constitution. All other powers of government except those prohibited to the states by the Constitution are reserved to the states or the people. Within its sphere of delegated authority, the Federal Government is paramount.

Commerce Power. Federal projects relating to water resource development must be within the scope of powers conferred by the Constitution. The "commerce clause" of the Constitution is most frequently cited as the authority for the Federal Government to engage in water resource development. In this clause, the express power is delegated to Congress "to regulate Commerce with foreign nations, and among the several states, and with the Indian tribes." Since 1824 the "commerce clause" has been construed to comprehend navigation within the limits of every state in the Union.

The power to regulate commerce comprehends control, for that purpose and to the extent necessary, of all the navigable waters of the United States which are accessible from a state other than those in which they lie. For this purpose navigable waters are public property of the Nation, subject to legislation of Congress. The authority of the Federal Government to prevent interference with and obstructions to navigation, including those created under prior state or Federal sanction, has been sustained repeatedly. On the other hand, numerous decisions have sustained the proprietary control of the states over navigable waters and their beds, subject always to the rights conferred upon the Federal Government by the Constitution.

Navigable waters of the United States have been defined as follows:

Those rivers must be regarded as public navigable rivers in

law which are navigable in fact. They are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. They constitute navigable waters of the United States within the meaning of the acts of Congress, in contradistinction from the navigable waters of the States, when they form in their ordinary condition by themselves, or by uniting with other waters, a continued highway over which commerce is or may be carried on with other states or foreign countries in the customary modes in which such commerce is conducted by water.

The authority of the Federal Government to protect and develop navigation is applicable to both non-navigable reaches of a navigable stream and its non-navigable tributaries if the navigable capacity of the waterway or interstate commerce may be affected. The creation of any obstruction not affirmatively authorized by Congress to the navigable capacity of any waters in respect of which the United States has jurisdiction is prohibited by statute.

Proprietary Power. Certain Federal authority relating to land and water resources is derived from the "property clause" of the Constitution. Congress has proprietary power "to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States." The proprietary power entrusts Congress with unlimited power over the use of public lands. The Supreme Court has held that it is for Congress alone to say how the trust shall be administered. This power is of significance to irrigation in the western States and to the development of power at Federal projects.

The right of the Federal Government to produce and dispose of power at Federal projects has been affirmed many times. In an early decision the authority of the Federal Government to utilize water power incidental to a navigation dam was made by the Supreme Court:

"At what points in the dam and canal the water for power may be withdrawn, and the quantity which can be treated as surplus with due regard to navigation, must be determined by the authority which owns and controls the navigation. In such matters there can be no divided empire."

The proprietary power is the constitutional foundation of reclamation laws. A court held in 1910 that the Federal Government can exercise constitutionally the power of eminent domain to obtain private lands necessary for a project irrigating both public and private lands. The same court pointed out that the public welfare required that public lands, as well as those held in private ownership, should be reclaimed and made productive. In a

case in which the Reclamation Act was not an issue, the Supreme Court made this observation:

"As to those lands within the limits of the States, at least of the Western states, the national government is the most considerable owner and has power to dispose of and make all needful rules and regulations respecting its property."

General Welfare Power. The Constitution empowers Congress to levy taxes and to appropriate funds to provide for the general welfare of the nation. The "general-welfare clause" is a delegation of power separate from and not restricted by those enumerated in the same section of the Constitution. Dictum in a 1950 case dealing with reclamation law indicates that Congress may have a substantive power to tax and appropriate funds for the general welfare which is limited only by the requirement that the power be exercised for the common benefit as distinguished from some mere local purpose. Referring to reclamation, the Court asserted:

"Thus the power of Congress to promote the general welfare through large-scale projects for reclamation, irrigation, or other internal improvement, is now as clear and ample as its power to accomplish the same results indirectly through resort to strained interpretation of the power over navigation."

War Power. Congress is empowered by the Constitution to levy taxes and to appropriate funds to provide for national defense. The scope of this power in relation to water resource development is largely unexplored. In a 1936 case the Supreme Court approved the constitutionality of a dam on the Tennessee River which was authorized for construction by the Federal Government to generate power for products for munitions of war and useful in the manufacture of fertilizers and other products.

STATUTORY (5)

Congress has enacted several major laws concerning water resource development and a multitude of minor acts which are in addition to those dealing with individual project situations. This section discusses the major legislative efforts of Congress pertaining to the subject and in particular, the state and Federal relationships established by the legislation. A summary of Federal agencies and committees having responsibilities pertaining to water resources, and their duties, is given here. This section deals with the permanent Federal agencies having direct, primary responsibilities in the field of water resources. These responsibilities are divided among 24 agencies in seven Cabinet departments, and eleven independent agencies, including two within the Executive Office of the President, for a grand total of 35 agencies

which have specific responsibility on some aspect of Federal water resources activities. A number of other agencies, such as the General Accounting Office, which has the responsibility for auditing the operations of Federal water resources agencies, and, therefore, has a considerable group of experts having knowledge of Federal water resources activities, and the Department of Justice, responsible for legal work in connection with such activities, have not been included in the compilation, because their responsibilities are dependent on primary activity of other agencies. Likewise, agencies such as the military departments and the agencies of the General Services Administration, which engage in water resources activities such as water supply, pollution control, power generation solely for their own installations, are omitted.

TABLE S-I(FED)

FEDERAL AGENCIES, AND WATER AND RELATED LAND RESOURCES FUNCTIONS

	Department of Agriculture.....						
	Agricultural Research Service	Agric. Stabilization and Conservation Svce.	Economic Research Svce.	Farmers Home Admin.	Federal Extension Svce.	Forest Service	Soil Conservation Service
WATER SUPPLY				C			A B
FLOOD CONTROL				C		A B C	A B C
NAVIGATION							
IRRIGATION, DRAINAGE, AND LAND MANAGEMENT		C		C	B C	A B C	A B C
WATER POLLUTION CONTROL AND WASTE WATER DISPOSAL		C		C			
FORESTRY		C		C	B C	A B C	
RECREATION				C	B C		A B C
FISH AND WILDLIFE CONSERVATION		C		C			A B C
WATER-BORNE TRANSPORTATION							
HYDROELECTRIC POWER							
HYDROLOGICAL AND GEOLOGICAL RESEARCH	B						
MARINE SCIENCES							
MINING AND MINE WATER DISPOSAL							
WEATHER AND ATMOSPHERIC RESEARCH							
ECONOMIC AND STATISTICAL RESEARCH			A B				

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)
B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)
C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

TABLE S-I(FED)Cont'd

FEDERAL AGENCIES, AND WATER AND RELATED LAND RESOURCES FUNCTIONS

	Department of Commerce.....					Dept. of Defense.....	
	Bureau of the Census	Economic Development Administration	National Oceanic and Atmospheric Admin.	Office of Business Economics	Office of Regional Economic Development	Department of the Army Corps of Engineers	Department of the Navy Off. of Naval Research
WATER SUPPLY		C				A B	
FLOOD CONTROL		C				A B	
NAVIGATION						A B	
IRRIGATION, DRAINAGE, AND LAND MANAGEMENT						A B	
WATER POLLUTION CONTROL AND WASTE WATER DISPOSAL		C					
FORESTRY							
RECREATION						A B	
FISH AND WILDLIFE CONSERVATION			A B C			A B	
WATER-BORNE TRANSPORTATION		C					
HYDROELECTRIC POWER						A B	
HYDROLOGICAL AND GEOLOGICAL RESEARCH			A B			A B	A
MARINE SCIENCES			A B C				
MINING AND MINE WATER DISPOSAL			A B				
WEATHER AND ATMOSPHERIC RESEARCH			A B				
ECONOMIC AND STATISTICAL RESEARCH	A B			A B	B		

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)
B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)
C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

TABLE S-1(FED)Cont'd

FEDERAL AGENCIES, AND WATER AND RELATED LAND RESOURCES FUNCTIONS

	Department of the Interior.....						
	Department of Housing and Urban Development	Bureau of Mines	Bureau of Outdoor Recreation	Fish and Wildlife Svce.	Geological Survey	National Park Service	Office of Water Resources Research
WATER SUPPLY	C						
FLOOD CONTROL							
NAVIGATION							
IRRIGATION, DRAINAGE, AND LAND MANAGEMENT						A B	
WATER POLLUTION CONTROL AND WASTE WATER DISPOSAL	C	A B C					
FORESTRY							
RECREATION			A B C	A B C		A B	
FISH AND WILDLIFE CONSERVATION				A B C		A B	
WATER-BORNE TRANSPORTATION							
HYDROELECTRIC POWER							
HYDROLOGICAL AND GEOLOGICAL RESEARCH					A B		C
MARINE SCIENCES							
MINING AND MINE WATER DISPOSAL		A B C					
WEATHER AND ATMOSPHERIC RESEARCH							
ECONOMIC AND STATISTICAL RESEARCH				A B			

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)
B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)
C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

TABLE S-1(FED)Cont'd

FEDERAL AGENCIES, AND WATER AND RELATED LAND RESOURCES FUNCTIONS

	Department of Transportation.....			Exec. Off. of the Pres.	
	Coast Guard	Federal Highway Administration	Atomic Energy Comm.	Environmental Protection Agency	Council of Environmental Quality
WATER SUPPLY				A B C	
FLOOD CONTROL					
NAVIGATION	A B				
IRRIGATION, DRAINAGE, AND LAND MANAGEMENT		C			A
WATER POLLUTION CONTROL AND WASTE WATER DISPOSAL	A B		A B C	A B C	A
FORESTRY					A
RECREATION					
FISH AND WILDLIFE CONSERVATION					A
WATER-BORNE TRANSPORTATION	A B			A B	A
HYDROELECTRIC POWER					
HYDROLOGICAL AND GEOLOGICAL RESEARCH					
MARINE SCIENCES	A B				A
MINING AND MINE WATER DISPOSAL					
WEATHER AND ATMOSPHERIC RESEARCH					
ECONOMIC AND STATISTICAL RESEARCH					

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)
B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)
C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

TABLE S-I(FED)Cont'd

FEDERAL AGENCIES, AND WATER AND RELATED LAND RESOURCES FUNCTIONS

	Executive Office of the President: National Council on Marine Resources and Engineering Development	Office of Emergency Preparedness	Federal Power Commission	Interstate Commerce Commission	National Science Foundation	National Water Commission	Water Resources Council
WATER SUPPLY		A				A	A C
FLOOD CONTROL							A C
NAVIGATION							A C
IRRIGATION, DRAINAGE, AND LAND MANAGEMENT		A				A	A C
WATER POLLUTION CONTROL AND WASTE WATER DISPOSAL					B C	A	A C
FORESTRY							A C
RECREATION							A C
FISH AND WILDLIFE CONSERVATION							A C
WATER-BORNE TRANSPORTATION				A			A C
HYDROELECTRIC POWER			A				A C
HYDROLOGICAL AND GEOLOGICAL RESEARCH					B C		A C
MARINE SCIENCES	A						
MINING AND MINE WATER DISPOSAL							A C
WEATHER AND ATMOSPHERIC RESEARCH					B C		
ECONOMIC AND STATISTICAL RESEARCH			A	A	B C		

(Terminated 30 April, 1971)

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)
B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)
C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE (5)

The Agricultural Research Service conducts research to provide a scientific basis and support for the land and water resource programs administered by operations agencies of the Department of Agriculture. Included are investigations on the hydrologic performance of agricultural watersheds; erosion and sedimentation; moisture and water conservation; irrigation; drainage; hydraulics of water control structures and channels; soil properties, processes, and management; soil-water-plant relations; plant nutrition; reclamation and management of saline and sodic soils; and practices and systems for preventing or controlling contamination of soil and water resources by agricultural chemicals and farm wastes.

The research is conducted under five principal statutes, including the Organic Act establishing a Department of Agriculture, May 15, 1862, Ch. 12 Stat. 387; Soil Conservation Act, April 27, 1935 (P.L. 46, 74th Cong.) 49 Stat. 163; Bankhead-Jones Act, June 29, 1935, Ch. 338, 49 Stat. 436; Research and Marketing Act, August 14, 1946 (P.L. 733, 79th Cong.), 60 Stat. 1082-1091; and Watershed Protection and Flood Prevention Act, August 4, 1954 (P.L. 566, 83rd Cong.), 68 Stat. 666.

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE (5)

The Agricultural Stabilization and Conservation Service was established June 5, 1961, by the Secretary of Agriculture to replace previous agencies which had similar functions.

The principal water-related activities of the Service are financial and technical assistance to individual farmers for installing needed soil, water, woodland, and wildlife conserving practices, through the Agricultural Conservation Program; and disaster relief, through direct assistance to farmers and ranchers whose supplies have been destroyed or whose farmlands have been seriously damaged by widespread flood or drought.

The Agricultural Conservation Program was authorized by the Soil Conservation and Domestic Allotment Act of 1936. Through it, the Government shares costs to farmers and ranchers in establishing permanent protective cover, conservation and disposal of water, temporary protection of soil from wind and water erosion, and emergency conservation measures in designated disaster areas to control damage from floods, hurricanes, and other natural disasters.

ECONOMIC RESEARCH SERVICE (1), (2)

This service, authorized by the Agricultural Marketing Act of 1946 (7 U.S.C. 1621-1627), participates in comprehensive river basin planning and engages in research on the economics of natural resource use and development. In comprehensive river basin investigations, the service develops baseline projections of agricultural production, land use, and employment and income; analyzes agricultural demand for land and water and economic needs for development; and evaluates the economic impact and implications of water resource development alternatives on the agricultural and related sectors of the economy.

FARMERS HOME ADMINISTRATION (5)

The Farmers Home Administration operates under three principal statutes: Consolidated Farmers Home Administration Act of 1961 (7 U.S.C. 1921), as amended by the Act of October 7, 1965 (79 Stat. 931); title V of the Housing Act of 1949 (42 U.S.C. 1471); and part A, title III of the Economic Opportunity Act of 1964 (42 U.S.C. 2851).

This agency provides credit, technical, and management assistance to rural groups for developing community water supply and sewerage systems, and to local organizations to help finance the non-Federal costs of watershed projects. Authority for the latter loans is contained in the Watershed Protection and Flood Prevention Act of 1954 (16 U.S.C. 1006a).

FEDERAL EXTENSION SERVICE (2)

Under the Smith-Lever Act, as amended (7 U.S.C. 341-349), the Federal Extension Service provides advisory services and counseling in a number of areas, as well as grants where needed. Of interest in the present context are the Extension Programs for Forestry Production and Marketing, for Recreation, Wildlife, and Natural Beauty, and for Soil and Water Conservation; these programs aim for the optimum appreciation, management, and exploitation of privately-owned natural resources, through dissemination of technical information, and provision or development of the needed organizational skills.

FOREST SERVICE (5)

The National Forests, administered by the Forest Service under the general direction of the Secretary of Agriculture, came into being in 1891 when Congress adopted an act that empowered the Pres-

dent to set aside forest reserves for the purpose of "securing favorable conditions of water flows and to furnish a continuous supply of timber for the use and necessities of the citizens of the United States." The Organic Act of 1897 constitutes the law under which the National Forests are administered: it provided, among other things, for the creation of the forest reserves only for purposes of producing timber and protecting water supply.

The Weeks Act of March 1, 1911, and the Clarke-McNary Act of 1924, provided for interstate and state-Federal cooperation in the acquisition of lands in the watersheds of navigable streams, for the purposes of preserving their navigability, controlling forest fires, and timber production. Under these acts, all national forests within the North Atlantic Region have been established. There are five National Forests partially or entirely situated within the region: the White Mountain National Forest in Maine and New Hampshire, established in 1918, with 675,164 acres in the NAR Study area; the Green Mountain National Forest in Vermont, 1932, 232,937 acres; the Monongahela National Forest in West Virginia, 1920, 74,309 acres; the George Washington National Forest in Virginia, 1932, 1,003,391 acres; and the Jefferson National Forest in Virginia, 1936, 257,200 acres; for a total of 2,243,000 acres in the region.

Other relevant legislation has included the Norris-Doxey Cooperative Farms Forestry Act of 1937, the Cooperative Forest Management Act of 1950, the Watershed Protection and Flood Prevention Act of 1954, the Agricultural Act of 1956, the Multiple Use Sustained Yield Act of 1960, and the McIntire-Stennis Act of 1962 providing assistance to states in forestry research, to total twenty-nine major pieces of legislation which have furthered the protection, sound management and wise use of the watershed area in forest cover.

SOIL CONSERVATION SERVICE (5)

The Soil Conservation Service of the Department of Agriculture is a technical agency created to develop and carry out a national soil and water conservation program, including the provision of technical aid for planning and installing conservation farming systems on farm lands, and for projects for the conservation and development of land and water resources in the upstream watersheds. This assistance is currently being provided primarily under three authorities: (1) the Soil Conservation Act of 1935, (2) the Flood Control Act of 1944, and (3) the Watershed Protection and Flood Prevention Act of 1954.

Soil Conservation Act of 1935. This law, P.L. 74-46, created the Soil Conservation Service, and authorizes on-site technical

assistance to landowners and operators in developing, applying, and maintaining sound plans for soil and water conservation on their land, through soil conservation districts organized under state laws. Such districts now include 97 percent of the land in the North Atlantic Region. Technical assistance is also provided to groups of farmers in communities and upstream watersheds in developing and carrying out measures for land and water resource development that require community or group action for their installation, operation and maintenance, such as small floodwater-detention structures, channel improvements to reduce flood overflow and provide better drainage, water storage, and improved distribution systems for irrigation, community water supply, etc.

Under the authority of this legislation, the Soil Conservation Service received an appropriation for the fiscal year 1954, to plan and carry out 54 "pilot" watershed projects as a means of demonstrating the effectiveness of upstream watershed protection and flood prevention improvements. These watersheds, located in 33 states, range in size from a few thousand acres to more than 250,000 acres. Seven of the projects are located in the North Atlantic Region. The Federal Government is bearing slightly less than one-half of the costs of the projects, the remainder being contributed by local people within the watersheds and by non-Federal agencies cooperating with them. All works of improvement have been installed on 50 of the 54 authorized pilot projects.

Flood Control Act of 1936. Following major floods in 1935 and 1936, Congress enacted the Flood Control Act of 1936, in which the Federal Government recognized for the first time its responsibility for flood control. The Department of Agriculture was made responsible for upland treatment of watersheds and flood control through small structures.

Flood Control Act of 1944. Among other provisions, this law authorizes the Department of Agriculture to install works of improvement for runoff and waterflow retardation and soil erosion prevention in eleven watersheds covering a total of some 30,000,000 acres, in order to speed up installation of land treatment measures by the landowners and operators, to obtain maximum control of water where it falls, and to provide additional protection as needed through stabilization of major gullies, debris dams to control sediment, floodwater retarding structures and channel improvements to reduce flood overflows, works to stabilize streambanks, and similar measures.

Work in the eleven authorized watersheds, one of which is in the North Atlantic Region, provided experience and was used as a guide in later legislation for upstream watershed programs.

Section 6 of the Act repeals the authority of the Secretary of

Agriculture, granted by the Flood Control Act of 1936, to make preliminary examinations and surveys and to prosecute works of improvement for runoff and waterflow retardation and soil erosion prevention on the watersheds of rivers and other waterway.

Watershed Protection and Flood Prevention Act of 1954. The stated purpose of this Act, P.L. 83-566, as amended, is to carry out works of improvements pertaining to soil and water conservation and flood prevention, agricultural water management including irrigation and drainage, and provide for multiple uses such as public recreation or fish and wildlife development; municipal or industrial water supply; and other non-agricultural water-management measures such as storage in reservoirs for pollution-abatement by streamflow regulation or saline-water-intrusion control.

Assistance to individuals and local organizations is provided in planning, designing, and establishing watershed works of improvement, and in sharing costs of flood prevention, irrigation, drainage, sedimentation control, water supply, public recreation and fish and wildlife development.

Up to 1 January 1966, 91 P.L. 566 projects had been authorized for construction in the North Atlantic Region, and construction had been completed in 12 projects. These projects are discussed in more detail in Appendix F, Upstream Flood Control and Water Management.

However, the watershed project work plan may not encompass an area of more than 250,000 acres, and the maximum impoundment of any one structure is restricted to 25,000 acre-feet in total, and to 12,500 acre-feet for the purpose of floodwater retention. Watershed areas of 75,000 acres or less are limited to one recreational development; two are permitted in watersheds of 75,000-150,000 acres, and three in watersheds greater than this in area.

The Secretary of Agriculture delegated responsibility for the forestry phases of the P.L. 566 watershed program to the Forest Service, which in turn cooperates closely with other involved agencies and particularly with the State Foresters who provide the direct technical assistance to woodland owners. Such forestry work includes protection of forest land from livestock grazing, fire, insects and diseases, provision of technical assistance for the improvement and sound management of existing woodlands, and reforestation of areas where optimumm land use has changed from agriculture to forestry, or which are so badly eroded as to be critical sources of sedimentation and rapid runoff of water.

DEPARTMENT OF COMMERCE

BUREAU OF THE CENSUS (2), (5)

The Bureau was established as a permanent agency the Act of March 6, 1902 (32 Stat. 51), and incorporated in the Department of Commerce and Labor on February 14, 1903. Laws pertaining to it are organized under title 13 of the United States Code. The Bureau is included here because, as the principal government statistical agency, it is a generator and reservoir of data used in water resources planning.

Statistical surveys, which are very wide-ranging in subject matter and geographical area, include (1) censuses of population, housing, agriculture, irrigation and drainage, business, construction, transportation, manufacturing, mineral industries, commercial fisheries, and governments; (2) periodic and special surveys; (3) foreign trade statistics; and (4) statistical compendia, directories, and guides to statistical data. In addition, maps are prepared in the course of planning and execution of the various surveys, or separately for inclusion in them, or independently, showing political, demographic, and statistical boundaries. All of these maps and surveys are generally available, as provided in 13 U.S.C. 8.

Census intergovernmental services involve statistical, technical, and informational assistance to state and local governments, under 13 U.S.C. 8 and 31 U.S.C. 686.

ECONOMIC DEVELOPMENT ADMINISTRATION (1), (2)

The Public Works and Economic Development Act of 1965 (P.L. 89-136), recognizing that some regions, counties and communities are persistently disadvantaged in economic terms, relative to the country as a whole, established this agency to provide project grants, loans, repayable advances, guarantees of credit, technical planning assistance, and information to such localities as needed.

In particular, under P.L. 89-136, as amended by P.L. 90-103 and 91-123 (42 U.S.C. 3131, 3135, 3141, 3161 and 3171), grants are available for such public facilities as water and sewer systems, port facilities, and flood control projects, provided that they are pressingly needed, will work to alleviate "hard-core" unemployment, and are consistent with a regional plan for the area. Grants may also be made to these localities to cover the expenses of sound and comprehensive planning (staff salaries, administration, and the like).

Title V of P.L. 89-136 authorizes the Secretary of Commerce to

designate economic development regions, and to invite the states of a region to establish a regional commission. The New England Regional Action Planning Commission is one such commission, and is described in Section III, INTERSTATE-FEDERAL COOPERATIVE BODIES.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

This new agency was established on October 2, 1970, pursuant to Reorganization Plan No. 4 of that year. As its name implies, it is a consolidation of other agencies concerned with scientific inquiry into the nature and resources of the atmosphere and oceans of the planet, primarily the Environmental Science Services Administration, which was already a part of the Department of Commerce. Other agencies and functions subsumed include the Bureau of Commercial Fisheries and elements of the Bureau of Sport Fisheries and Wildlife of the Fish and Wildlife Service, and the Marine Minerals Technology Program of the Bureau of Mines, all in the Department of the Interior; the U.S. Lake Survey of the Department of the Army; the Department of Transportation's National Data Buoy Project; the programs carried out by the National Oceanographic Data Center and the Instrumentation Center for the Department of the Navy; and the Office of Sea Grant Programs for the National Science Foundation.

Among the agencies derived from the Environmental Science Services Administration, the Coast and Geodetic Survey provides charts for marine and air navigation, a basic network of geodetic control, and other basic data for engineering, scientific, commercial, industrial and defense needs; pursuant to this it conducts surveys, analyses, and research in hydrography, oceanography, geodesy, cartography, photogrammetry, geomagnetism, seismology, gravity, and astronomy (33 U.S.C. 883A, P.L. 80-373, and 61 Stat. 787).

The Environmental Data Service operates data centers for the storage, retrieval, compilation, publication, and dissemination of environmental data, conducts research, and coordinates its efforts with world scientific organizations.

The Institutes for Environmental Research conduct an integrated research program relating to all aspects of the natural environment and its utility to man, and propagation research and services in support of the nation's telecommunication activities.

The National Environmental Satellite Center manages and coordinates all operational satellite programs within the Environmental Science Service Administration, and conducts research in new techniques of environmental data collection through satellites, as well

as research in the various phases of satellite systems engineering.

The National Weather Service (formerly the Weather Bureau) observes and reports the weather of the United States and its possessions, developing and distribution forecasts of weather forecasts of weather conditions, including river levels and streamflow, and warnings of violent storms, floods, and other adverse occurrences. The Service participates in international meteorological and hydrological activities, and provides forecasts for domestic and international aviation and for shipping on the high seas.

The National Oceanic and Atmospheric Administration inherited from the Bureau of Commercial Fisheries the responsibility for biological research on commercially important species of marine life in coastal and territorial waters of the United States, and in the high seas. This includes the collection of information on the size and growth of these resources and their reaction to various intensities of fishing, as a basis for management by the states or by international commissions.

Services provided to aid commercial fisheries include the collection and general dissemination of technical, economic, and market information; conduct of technological, economic, and marketing research studies; financial cooperation with the states in coordinated programs for fishery development; enhancement of product quality through research in techniques of handling, processing, storing and transporting; administration of loan and grant programs for the construction, maintenance, repair, upgrading and operation of vessels and gear; overview of the activities of fishing cooperatives; and, in collaboration of the Department of Health, Education, and Welfare, provision of assistance in the development of appropriate vocational training.

The conservation and development of anadromous fish occur through a state-Federal cooperative program which is presently concentrating on the salmon and steelhead fisheries of the Great Lakes and the Pacific Northwest and on restoration of Atlantic Coast salmon spawning areas. This function was previously performed by the Bureau of Sport Fisheries and Wildlife.

OFFICE OF BUSINESS ECONOMICS (1), (2), (5)

This agency provides basic economic measures of the national economy, current analysis of the economic situation and the business outlook, the United States balance of international payments, measurement and analysis of the factors affecting regional economic development in the United States, and general economic research on the functioning of the economy (15 U.S.C. 1501, 1511, 1512, 171, 175; 64

Stat. 1263).

There are six major operating units: National Income Division, National Economics Division, Current Business Analysis Division, Business Structure Division, Balance of Payments Division, and Regional Economics Division. The latter was established by the Department of Commerce in 1964, to provide for the Water Resources Council a consistent set of projections of income, employment and population for local areas throughout the country; these projections are intended to serve as the economic basis for planning the development of water and related land resources in various areas of the nation.

OFFICE OF REGIONAL ECONOMIC DEVELOPMENT (5)

This office was established by the Secretary of Commerce on 6 January 1966, to assist in the administration of Title V of the Public Works and Economic Development Act of 1965 (P.L. 89-136). Among other things, it provides and evaluates information to aid the Assistant Secretary in designating economic development regions; assists the states in establishing Regional Action Planning Commissions within these regions; and provides continuing advice, information and assistance to the regional commissions on the preparation of economic development plans, while maintaining a continuous review of the commissions' progress and activities.

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS (5)

The U. S. Army, through the civil functions of the Corps of Engineers, has the oldest and largest of the Federal water resources programs, dating back to 1824, when the engineers of the United States Army, being the only body of engineers within the Federal establishment, were given responsibility for work on rivers and harbors for navigation. Over the years, responsibilities in the fields of flood control, hydroelectric power, municipal and industrial water supply, recreation, and planning for all functions of water resources development were added by statute. The program is administratively directed by the Secretary of the Army, who reports to the President through the Bureau of the Budget, without involving the Secretary of Defense.

General Investigations Program

Surveys and Comprehensive River Basin Studies. The scope of and requirements for Corps of Engineers' water resources projects have developed through a long series of River and Harbor and Flood Control Acts. Projects for river basin development, flood control, navigation, beach erosion control, and hurricane protection require specific authorization by Congress after investigations and reports by the Corps. Other functions, such as power, water supply, water quality control, recreation, and fish and wildlife enhancement may be included when warranted and local interests will agree to participate in accordance with law and policy. When project costs are less than certain limits specified in law, general authorities are available to the Secretary of the Army and the Chief of Engineers to develop and authorize small projects, as further outlined below, without returning to Congress for approval. Surveys are made entirely at Federal expense except for use of suitable locally developed data. Comprehensive river basin studies by the Corps stem from specific Congressional authorization, and the Water Resources Planning Act of 1965 (Public Law 89-80). Studies are coordinated with other Federal and local agencies and seek the objectives of the 1944 and subsequent Flood Control Acts and Public Law 89-80.

This area of activity was further broadened by the Public Works-Rivers and Harbors Act of 1965 (P.L. 89-298), Title I of which mandated the Northeastern United States Water Supply (NEWS) Study, a comprehensive investigative and planning effort by Federal, state and local agencies, in accordance with the Water Resources Planning Act of 1965, and under the leadership of the Corps of Engineers. The resulting regional water supply plan could authorize, for the

first time, Federal construction, operation, and maintenance of a system of major reservoirs, conveyance facilities, and purification facilities for the primary purpose of public water supply.

Title II, Section 214, of the same act authorizes the Secretary of the Army, through the Chief of Engineers, to cooperate with the State of New York in comprehensive water resources planning within the State. New York is at present the only state participating in this pilot program, under which the State assumes the leading role, with the District offices of the Corps of Engineers furnishing advice and assistance of various kinds.

Five District offices are involved in this program, the New York, Philadelphia, and Baltimore Districts of the North Atlantic Division, the Buffalo District of the North Central Division, and the Pittsburg District of the Ohio River Division. These offices assist regional boards, which have been, or are being established for each of the ten major river basins in the State, in developing work requirements.

A total of $765,000 has been appropriated for this program from its inception through the fiscal year 1971, with the bulk of the work ($500,000) being performed through the Buffalo District office. The State has generally requested an amount considerably in excess of the approved allowance.

Flood Plain Information Studies. Section 206 of the Flood Control Act of 1960 (P.L. 86-645, as amended; 33 U.S.C. 709a), authorized the Secretary of the Army through the Chief of Engineers, at the request of state and responsible local governmental agencies, to compile and disseminate information on floods and flood damages, and provide general criteria for local guidance in planning the use of flood plains and engineering advice on reducing the flood hazard. Such studies are made largely at Federal expense within the limits of appropriated funds. Local interests are encouraged to provide mapping, aerial photography, stream gauges and similar relevant assistance and information.

General Program of Water Resources Projects

General. Adoption of a Federal project generally requires findings of economic feasibility in survey reports made in response to specific Congressional authorization. Studies are thoroughly coordinated with local interests and other Federal agencies, and are reviewed by the Bureau of the Budget. Following Congressional consideration and authorization of recommended projects, usually in Omnibus River and Harbor and Flood Control Acts, funds for Federal design, construction, operation and maintenance, consistent with the authorized conditions of local cooperation, are subsequently

appropriated by Congress after consideration of the President's Budget.

Comprehensive River Basin Developments. The comprehensive studies in which the Corps of Engineers participates, in cooperation with interstate, Federal, state and local agencies, will develop a series of long-range framework plans for the development of the river basins of the Nation. The chair agency of each of these studies is a basin commission established under the Water Resources Planning Act of 1965. These plans will provide the context within which specific projects to meet the prospective needs of the country will be developed and proposed to the Congress for authorization as Federal projects. Pursuant to the objectives of the body of Federal water resources law and the Water Resources Planning Act, framework plans will inventory and specific studies will seek to determine the best programs and projects for optimum satisfaction of the Nation's needs for navigation improvements, flood control, major drainage, irrigation, hydroelectric power, water supply, water quality control, outdoor recreation, and fish and wildlife conservation and enhancement. Authorization reports specify the recommended Federal participation and local cooperation deemed appropriate.

Navigation. River and harbor improvements for navigation have been a Federal responsibility since 1824. Local interests are required to provide necessary lands, easements and rights-of-way for the project and for spoil disposal where needed, relocation or alteration of utilities, public terminals, and maintenance of berthing areas. Special contributions may be required for single-user projects and where land enhancement results from spoil disposal. Railroad and highway bridge alterations are financed cooperatively under Public Law 647, 76th Congress, as amended. Recreational harbors may be recommended where feasible, and a local cash contribution of 50 percent of the first costs of the general navigation facilities allocated to recreational boating is required in addition to other cited requirements of cooperation. Maintenance of navigation projects is at Federal expense.

Flood Control. The Federal interest in nationwide flood control was established by the Flood Control Act of 22 June 1936. That Act states that the Federal Government should participate in flood control "if the benefits to whomsoever they may accrue are in excess of the estimated costs, and the lives and social security of the people are not otherwise adversely affected," a principle further clarified and elaborated upon in Senate Document 97 (1962). The 1936 and subsequent Acts established the basis for the common policy on local cooperation followed by the Corps of Engineers. For proposed local protection projects, local interests are generally required to give assurances that they will provide lands, easements, and rights-of-way (including relocations and alterations of highways, highway bridges,

and utilities); hold and save the United States free from damages due to the construction works; and operate and maintain the projects after construction. These three requirements are known as the "a-b-c" requirements of local cooperation. Flood control reservoirs, however, are generally exempt from such requirements except in special cases where the benefits are confined to a single locality and the project is in lieu of local protection works. Special local cooperation, usually as a cash contribution, may be recommended for flood control projects that produce "windfall" benefits to a few beneficiaries, or that involve land drainage benefits. The 1944 Flood Control Act requires the Secretary of the Army to prescribe regulations for operation of flood control and navigation storage at all reservoirs constructed with Federal funds, except those of TVA.

Major Drainage. The Flood Control Act of 1944 (P.L. 534, 78th Congress) defined flood control to include "major drainage." Federal major drainage improvements are defined to mean major outlet channels serving local land drainage systems. Administrative policy, based on cost-sharing for reclamation by irrigation in the west, provides for equal sharing of the first costs of the major outlets, including lands, between the Federal Government and local interests, with the latter to operate and maintain the project after construction, and to provide all upstream drainage improvements.

Hydroelectric Power. Power development may be recommended in reservoir projects if economically justified. Where power is not found immediately feasible, penstocks in dams may be included for future power development upon the recommendation of the Federal Power Commission. In multiple-purpose projects, the costs allocated to power are the basis for establishing rates by the Federal marketing agencies.

Water Supply. Municipal and industrial water supply has traditionally been considered the primary responsibility of the states and local interests, except, as noted above, in the case of the NEWS Study. However, storage may be recommended in multiple-purpose reservoirs pursuant to the Water Supply Act of 1958 (P.L. 85-500, Title III), as amended. Such storage may be reserved entirely for water supply, or may be provided by joint use of seasonal flood control or other storage. Reimbursable costs allocated to water supply may be as much as 30 percent of total construction costs, with repayment for the use of such storage contracted by local interests. This reimbursement must, within the lifetime of the project, return the costs of the project allocated to water supply, and all construction costs (including interest during construction) must be repaid within 50 years of the time the project is first used for water supply storage. No payments for storage for future water supply need be made until this supply

is actually used, and no interest is charged on the cost of such storage for ten years, or until the storage is used for that purpose, which ever occurs first. Interim use for irrigation in the western states may be considered under the terms of the Reclamation Law.

Water Quality Control. Upon consultation with the Environmental Protection Agency, storage for streamflow regulation to improve water quality may also be recommended in multiple-purpose reservoirs pursuant to the Water Pollution Control Act of 1956 (P.L. 660, 84th Congress), as amended. The law provides, however, that such storage may not be provided as a substitute for adequate local treatment or other methods of controlling waste at the source. Such storage may be reserved entirely for streamflow regulation, or may be provided by joint use of storage serving other purposes. Costs allocated to water quality control may be assumed by the Corps of Engineers if the benefits are widespread.

Aquatic Weed Control. Title III, Section 302 of the Public Works-Rivers and Harbors Act of 1965 (P.L. 89-298; 33 U.S.C. 610) authorized a comprehensive program, to be administered by the Corps of Engineers, for the "control and progressive eradication of . . . obnoxious plant growths, from the navigable waters, tributary streams, connecting channels, and other allied waters of the United States," for the various purposes of navigation, fish and wildlife conservation, public health, esthetic improvement, and the like.

Recreation. Outdoor recreation, including enhancement of fish and wildlife for fishing and hunting, may be recommended as a proper purpose of Federal water resources projects pursuant to the Federal Water Project Recreation Act of 1965 (P.L. 89-72). If local interests agree to cooperate in recreational development, the separable costs of recreational facilities may be shared equally between Federal and non-Federal interests, and the joint costs allocable to recreation may then be assigned to the Federal Government. Cost-sharing in recreational development of authorized projects depends on the specific authorizing legislation, the status of completion of the basic project, and the applicability of general legislation. Recreational facilities at non-reservoir projects may be provided if local interests will share equally in the cost, and will assume operation and maintenance. Certain minimum basic facilities for public health and safety may be provided at Federal expense, but legislative and administrative policy seeks to encourage local interests to develop recreation areas and facilities at Federal projects at local costs. Under the Land and Water Conservation Act of 1965 (P.L. 88-578), fees collected from the public for admission to Federal water projects are returned in part to the states for recreational development thereby.

Fish and Wildlife Conservation. Pursuant to the Fish and Wildlife Coordination Act of 1958 (P.L. 624, 85th Congress), the Corps

of Engineers may recommend inclusion of certain project modifications and lands for fish and wildlife purposes in proposed projects. Justified measures to mitigate any project-caused damages to the fish and wildlife resource are included in the costs allocated to the purposes involved; measures for the development of the resource require specific legislative authorization.

Beach Erosion Control. The Act of 28 July 1956 (P.L. 826, 84th Congress), as amended by the River and Harbor Act of 23 October 1962 (P.L. 87-874; 33 U.S.C. 4263), authorized the Federal Government to assume up to 50 percent of the cost of construction for protecting publicly owned or publicly used beaches; and up to 70 percent for protection of publicly owned shore parks or conservation areas subject to certain conditions in Section 103 of the 1962 Act. Non-Federal interests are required to assume all remaining costs, including lands, maintenance and repairs, and provide assurances that they will hold and save the United States free from damages, remedy pollution conditions that would endanger the health of bathers, and maintain public ownership and use of the protected shares on which Federal aid is based.

Special Small Project Programs

General. General authority is provided in several laws that permit the Secretary of the Army and the Chief of Engineers to authorize projects of limited scope within fiscal year appropriations specified in the laws. A project is adopted for construction under one of these authorities only after investigation clearly shows its engineering feasibility and economic justification; an investigation is made upon receipt of a formal request to the District Engineer for the concerned area, from a prospective sponsoring agency fully empowered under state law to provide required local cooperation.

Small Flood Control Projects. Section 205 of the 1948 Flood Control Act as amended by Section 205 of the 1962 Flood Control Act (P.L. 87-874; 33 U.S.C. 701S) provides the Chief of Engineers with the authority to construct small flood control projects that have not already been specifically authorized by Congress. Each project selected must be complete in itself, economically justified, and limited to a Federal cost of not more than $1 million. The local sponsoring agency must agree to meet the "a-b-c" requirements described above (provide without cost to the United States all lands, easements, and rights-of-way, including highway, highway bridge, and utility relocations and alterations; hold and save the United States free from damages; and maintain and operate the project after completion); assume all project costs in excess of the Federal cost limit of $1 million; and prevent future encroachments on improved channels.

Small Navigation Projects. Section 107 of the River and Harbor Act of 14 July 1960 (P.L. 86-645), as amended, (Section 112 of P.L. 91-611, River and Harbors Acts of 1970), provides authority for the Chief of Engineers to develop, construct, and maintain small navigation projects that have not already been specifically authorized by Congress. Each project selected must be economically justified, complete within itself, and limited to a Federal cost of not more than $1,000,000. A Section 107 project can be authorized only if a state, municipality, or other public agency of the State empowered under State law with sufficient legal and financial authority to provide local cooperation and participation will agree to the same requirements of cooperation as for regularly authorized commercial and recreational navigation projects, and in addition assume all project costs in excess of the Federal cost limit of $1,000,000.

Small Beach Erosion Control Projects. Section 103 of the River and Harbor Act of 1962 (P.L. 87-874), as amended, (Section 112 of P.L. 91-611, River and Harbors Act of 1970), provides authority for the Chief of Engineers to develop and construct small shore and beach restoration and protection projects that have not already been specifically authorized by Congress. Each project under Section 103 must be complete, economically justified, and limited to a Federal cost of not more than $1,000,000, including any Federal share of periodic nourishment cost. Local cooperation is otherwise based on the same requirements as for regularly authorized larger beach erosion control projects.

Hurricane Protection Projects. In the Act of 15 June 1955, Congress provided for investigation of the problems of hurricane-created flooding in coastal areas, and the Flood Control Act of 1958 authorized several projects for hurricane protection, defining the basis for Federal participation in such projects. At least 30% of the first costs must be borne by local interests, including the cost of lands, easements, right-of-way, and relocations, the remainder being borne by the Federal government. Maintenance costs are borne entirely by local interests, although the actual maintenance work is performed by the Corps of Engineers.

Snagging and Clearing Projects for Flood Control. Section 208 of the 1954 Flood Control Act (P. L. 83-780; 33 U.S.C. 701g), authorizes clearing and straightening of stream channels and the removal of accumulated snags and other debris in the interest of flood control. Each project selected must be economically justified, and the maximum Federal expenditure per project is limited to $100,000. A Section 208 project is designed to be complete in itself and not require additional work for effective flood control. The local sponsoring agency must agree to the same provisions as described in the preceding paragraph.

Disaster Relief and Emergency Programs

Disaster Relief by Corps of Engineers. In connection with natural "major disasters," determined to be such by the President pursuant to the National Disaster Act of 1950 (P.L. 875, 81st Congress), the Civil Works organization of the Corps of Engineers may be called upon to participate in the program of Federal disaster assistance. Request for Corps participation may be made to the Chief of Engineers by the Director of the Office of Emergency Preparedness (OEP), acting in behalf of the President. The authority of the OEP Director has been delegated to OEP Regional Directors.

Following Presidential declaration of a "major disaster" at the request of a state Governor, requests for assistance are made by local authorities through state channels to the appropriate OEP Regional Director. With the concurrence of the responsible Army Commander, Division Engineers of the Corps may be directly requested by OEP Regional Directors to provide requested disaster assistance beyond statutory authorities of the Corps. During the disaster fighting phase, action by the Corps under P.L. 875 authority is normally through the Army military command. Requested disaster operations are reimbursable from disaster relief funds appropriated pursuant to P.L. 875 and made available by the President.

Circumstances may justify immediate action to save human life, to prevent imminent human suffering, or to mitigate great destruction or damage to the property of the United States. Such action may be taken or assistance given by the Corps of Engineers pending declaration by the President of a "major disaster," or in connection with other disasters not so designated. Authority thereunto stems from the statutory authorities of the Corps for flood fighting and rescue operations, or the established policies and practices of the Corps and the Department of the Army.

Emergency Operations. Flood, and storm emergency operations, including advance planning, patrolling of levees, flood fighting, rescue operations, emergency repairs and protection of Federal projects, and supplementation of local efforts upon request in emergencies, are authorized by the Flood Control Act of 18 August 1941, as amended by P.L. 84-99 and other acts (33 U.S.C. 701n). While emergency repairs of non-Federal flood control works are permissible, the law does not extend to reimbursement of local expenditures for flood fighting or post-flood repairs and improvements. Primary responsibility for disaster fighting rests with local interests. The Corps of Engineers seeks to encourage proper local maintenance of protective works and advance preparation for emergencies, including stockpiling of material and training of personnel. Local cooperation, substantially as required for regular flood control projects, is required for emergency rehabilitation work under P.L. 99, and for repairs which constitute accomplishment of, or improvement upon,

deficient local maintenance.

Civil Regulatory Functions

Use of Navigable Waters. Section 7 of the River and Harbor Act approved 8 August 1917 (40 Stat. 266; 33 U.S.C. 1) authorizes the Secretary of the Army to prescribe such regulations for the use, administration, and navigation of the navigable waters of the United States as public necessity may require for the protection of life and property, or for operations of the United States in channel improvement, covering all matters not specifically delegated by law to some other executive department

Permits. Section 10 of the River and Harbor Act approved 3 March 1899 (30 Stat. 1151; 33 U.S.C. 403) prohibits the placing of any structures in or over any navigable waters of the United States outside established Federal harbor lines, or excavating from or depositing material in such waters, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army. The instrument of authorization is designated as a permit.

Harbor, Pier, and Bulkhead Lines. Section 11 of the River and Harbor Act approved 3 March 1899 (33 U.S.C. 404) authorizes the Secretary of the Army to cause harbor lines to be established where it is made manifest to him that establishment is essential for the preservation and protection of a harbor.

Removal of Wrecks and Other Obstructions. The laws relating to removal of wrecks are contained in Section 8 of the River and Harbor Act approved 19 September 1890, Sections 15, 19, and 20 of the River and Harbor Act approved 3 March 1899, and the Act approved 17 September 1965.

Projects

Corps of Engineer navigation projects in the North Atlantic Region are listed in Appendix K, Navigation. Flood control projects of the Corps of Engineers are listed in Appendix E, Flood Control and Water Management on Main Stem and Major Tributaries, and in Appendix F, Upstream Flood Control and Water Management.

DEPARTMENT OF THE NAVY, OFFICE OF NAVAL RESEARCH (1)

The Office of Naval Research was established by organic legislation in 1946, to manage and direct a broad program of scientific research and exploratory development that is designed to make new and improved technological approaches available to the Navy. This

research is done in part under contract arrangements with universities, non-profit institutions, and industrial establishments; it includes studies of wave kinematics and dynamics.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (2), (4)

The interests of the Department of Housing and Urban Development in water resources may be divided into two broad considerations: encouragement of planning activities by municipal and other local governments on the most geographically and functionally comprehensive basis possible; and provision of adequate basic water supply and sewer facilities in urban areas, particularly in the context of such coordinated, comprehensive planning. These interests are implemented by the Office of Planning Standards and Coordination, and the Land and Facilities Development Administration, respectively. This Department also administers the nationwide flood insurance program, under the provisions of the National Flood Insurance Act of 1968.

COMPREHENSIVE PLANNING ASSISTANCE

The principal program in this area is the "701" program, so called because its authority is contained in Section 701 of the Housing Act of 1954, as amended (P.L. 83-560, 68 Stat. 590, 640; 40 U.S.C. 461). The aid is in the form of project grants for the preparation of development plans, policies, and strategies; programming of capital investments, government services, and implementation measures; and coordinating related plans and activities of other levels of government. Eligible subjects for such planning include land development patterns, physical facility needs, and the development and protection of natural resources.

This program of planning assistance is presently available to almost any subfederal government organization. Among those eligible are state agencies, metropolitan, nonmetropolitan and regional planning agencies, including councils of governments, counties, cities, local development districts, economic development districts, Indian reservations, and interstate regional commissions.

Section 702 of this same legislation, as amended, authorized interest-free, repayable advances of funds to state, municipal, and other local public agencies to aid in financing the cost of plan preparation for specific public works projects whose construction is expected to begin within five years. (This time limit may be extended for complex or difficult projects of area-wide scope.)

BASIC WATER AND SEWER FACILITIES

A program of grants to local governments to finance community water and sewer facilities is provided in the Housing and Urban

Development Act of 1965, Section 702, as amended (P.L. 89-117, 79 Stat. 451, 489, 42 U.S.C. 3101 44 CFR, Part 707). The grants are used for construction of basic water and sewer facilities, excluding sewage treatment plants, consistent with a program for a coordinated area-wide water and sewer facilities system, as part of the comprehensive planned development of the area.

Eligible agencies include cities, towns, counties, Indian tribes, public agencies or instrumentalities of one or more states, municipalities, or political subdivisions, or boards or commissions established to finance capital improvement projects.

Section 704 of the same Act, as amended, provides grants to finance site acquisition for future public construction, sufficient in amount to cover the actual or imputed interest costs of marshalling the necessary funds. These grants are nonrepayable if construction is begun within five years (or longer at the discretion of the Secretary of Housing and Urban Development).

Sections 204 and 206 of the Demonstration Cities and Metropolitan Development Act of 1966 (P.L. 89-754) further authorize the Secretary to make supplemental grants to projects already receiving aid through the Department's basic water and sewer facilities program, as a further incentive to coordinated, planned development.

Under Section 412 of the New Communities Act of 1968, Title IV of the Housing and Urban Development Act of 1968 (P.L. 90-448; 42 U.S.C. 3901-3914), supplementary grants are available to state and local public bodies carrying out new community assistance projects, if the grant is necessary for the realization of a project and if the project will produce a "substantial number" of low and middle income housing units; included are projects assisted by grants under the basic water and sewer facilities and land acquisition programs administered by the Department, and the water and waste disposal facilities program of the Farmer's Home Administration.

Finally, loans are available to small communities for the construction of needed public works, when credit is not otherwise available on reasonable terms, under the Housing Amendments of 1955, Title II, as amended (P.L. 84-345, 69 Stat. 635, 642; 42 U.S.C. 1491). The loans with terms up to 40 years, are available to finance only those parts of a project not covered by aid provided under other Federal programs, up to 100% of the total project cost. Various types of public works are eligible, including water and sewer facilities.

Local units of government or state agencies having the legal authority to build public works using debt financing are eligible for this aid, including cities, towns, villages, townships, counties, public corporations or boards, sanitary or water districts, and

Indian tribes; the applicant community must have a population of no more than 50,000, or no more than 150,000 in designated redevelopment areas.

NATIONAL FLOOD INSURANCE

Title XIII of the Housing and Urban Development Act of 1968, the National Flood Insurance Act of 1968, established a program of insurance against flood losses, to be administered by the Department of Housing and Urban Development, with the maximum feasible cooperation and participation of the private insurance industry, for the use of private citizens and businesses in areas posessing an acceptable comprehensive land-use planning program.

The first priority of insurance availability was designated as residential properties for one to four families and business properties operated by "small business concerns", with extension to other residential or business properties, agricultural properties, and properties of non-profit organizations or state and local governments, at the discretion of the Secretary. Limits on coverage were prescribed ($30,000 per structure generally, plus allowances for each dwelling unit or business occupant), and premium rates are determined for each locality after study and consultation.

In order to encourage land use practices which minimize flood damage losses, the Secretary of Housing and Urban Development is authorized to consult and contract with Federal, state, local, and private entities, so as to identify and publish information relating to the location and extent of flood plains, and to establish flood-risk zones in such areas, estimating the rates of probable flood-caused losses in these zones. It was further stipulated that, after June 30, 1970, no new insurance coverage would be provided in any area unless an appropriate public body had enacted acceptable permanent land use and control measures, with effective enforcement provisions.

Moreover, potential purchases of flood insurance are ineligible for coverage unless they avail themselves of it within one year after it is first offered in their locality. Following severe storm-induced flooding in New Jersey in September 1971, however, only a small fraction of affected property owners turned out to have coverage, or indeed even to know of its availability, although it had first been offered well over a year previously. As of October 1971, the resulting controversy over this aspect of the program has yet to be resolved.

DEPARTMENT OF THE INTERIOR

BUREAU OF MINES (5)

The basic authority of the Bureau of Mines with regard to water resources, as set forth in P.L. 61-179 and P.L. 62-386 (30 U.S.C. 1-11), is limited to research, investigation, and dissemination of technical information to Congress and the mineral industry, with the goal of the most efficient, least wasteful exploitation of the nation's mineral resources. This includes study of sources of water pollution (including mineral extraction operations) and its control, and the formulation of standards of water quality for various purposes.

The Bureau's role in comprehensive river basin planning comprises mineral inventories and projections of water consumption in mineral extraction operations, as well as consideration of disposal of liquid wastes and the impact upon mining operations of power and water transportation development resulting from water resources projects. Possible inundation of minerals important to the national welfare is also of concern.

The Water Quality Improvement Act of 1970 (Title I, P.L. 91-224; 84 Stat. 103) authorized demonstration projects illustrating "methods for the elimination or control, within all or part of a watershed, of acid or other mine water pollution resulting from active or abandoned mines," to be carried out jointly by Federal and state interests. Preference would be given to watersheds with "the greatest present or potential value for public use for recreation, fish and wildlife, water supply, and other public uses." Other sections of the same legislation prescribe standards, regulations, and penalties regarding oil spills in the navigable waters of the United States (84 Stat. 91 et seq.).

Current research interests of the Bureau include development of methods, techniques, instrumentation, and engineering principles for defining and controlling mine drainage problems, control of acid mine water drainage, evaluation of discharge water from specific mineral processing plants, evaluation of water needs and utilization by the mineral industry, and like problems. Research in the area of marine minerals development, formerly an interest of the Bureau of Mines, has been transferred to the National Oceanic and Atmospheric Administration.

BUREAU OF OUTDOOR RECREATION (1)

This agency was established by the Secretary of the Interior on April 2, 1962, as a result of recommendations of the Outdoor Recrea-

tion Resources Review Commission. The Bureau of Outdoor Recreation Organic Act of May 28, 1963 (P.L. 88-29, 77 Stat. 49; 16 U.S.C. 1-3) authorized the Bureau to prepare and maintain a nationwide outdoor recreation plan; provide technical assistance to states, their political subdivisions, and private outdoor recreation interests; sponsor, engage in, and assist outdoor recreation research; and promote coordination of Federal outdoor recreation plans and activities.

Its functions were further expanded with the passage of the Land and Water Conservation Fund Act of 1965 (P.L. 88-578, 78 Stat. 879), as amended by P.L. 90-401 (82 Stat. 354; 16 U.S.C. 1-4). Under this legislation, it administers the Land and Water Conservation Fund program, which provides financial assistance to the states, and through them to local public agencies, for the acquisition and development of public outdoor recreation resources. Financial and technical assistance are also provided to the states in the preparation and maintenance of statewide comprehensive outdoor recreation plans. The Bureau also coordinates a program of recreation land acquisition by the National Park Service, Forest Service, and Bureau of Sport Fisheries and Wildlife.

The Bureau of Outdoor Recreation provides recreation planning assistance at Federal water projects, in accordance with the Federal Water Projects Recreation Act of 1965 (P.L. 89-72). It also reviews non-Federal applications for Corps of Engineer permits and Federal Power Commission licenses. Recent legislation directs the Bureau to coordinate recreation programs with transportation programs, evaluate potential national recreation areas, and conduct studies of trails and wild and scenic rivers for inclusion in national systems.

FISH AND WILDLIFE SERVICE (3)

The U. S. Fish and Wildlife Service was created in the Department of the Interior on November 6, 1956, as provided by the Fish and Wildlife Act of 1956 (70 Stat. 1119; 16 U.S.C. 742b), replacing the former Fish and Wildlife Service, established June 30, 1940, by Reorganization Plan III. The Service is composed of the Office of the Commissioner and the Bureau of Sport Fisheries and Wildlife, responsible for wild birds and mammals (except whales, seals, and sea lions). Marine sport fishing, previously the responsibility of the Bureau of Sport Fisheries and Wildlife, has been shifted to the newly-formed National Oceanic and Atmospheric Administration, as have operations of the former Bureau of Commercial Fisheries in the Fish and Wildlife Service.

Bureau of Sport Fisheries and Wildlife. This agency operates toward the perpetuation, use, and enjoyment by the people, of the

sportfish and wildlife resources of the nation, through production and distribution of hatchery fish, operation of a nationwide system of wildlife refuges, regulation of migratory bird hunting, and management of fish and wildlife populations by scientific research and methods, all conducted in cooperation with other Federal agencies, the states, and private organizations.

The Bureau has programs for research, development, and management of fish resources, Federal aid to state fish and wildlife agencies, and technical assistance in preserving and enhancing water and related resources for sport fishing. A system of over 100 fish hatcheries is operated for the propagation and distribution of various species of sport fishes; the stocking of public waters and farm fish ponds is carried out in cooperation with state fish and game departments.

The goal of the Bureau's wildlife programs is to protect and enhance the values of the nation's wildlife species, enjoyed through recreational hunting, birdwatching, photography, and the like. Research is conducted through waterfowl management study, other migratory bird research, upland wildlife work, pesticide-wildlife relationship studies, disease and parasite studies, bird and mammal control methods, and replenishment and protection of endangered species.

Training in fish and wildlife research and management is furnished to Bureau, state, and private employees, students, and representatives of foreign governments. Financial aid is made available to state fish and wildlife departments for use in management programs at Bureau training centers or in Cooperative Units at universities.

Funds are allotted annually to state fish and wildlife departments for use in fish and game management programs. Funds are also being used to assist states in the Appalachian region to develop habitat for game and fish, improving the economy and recreational appeal of the region.

The Bureau studies water use projects proposed by Federal or private agencies for the probable effects of such projects on fish and wildlife resources and recommends measures for their conservation and development. Emphasis is placed on conservation of estuaries and development of comprehensive river basin plans which consider future recreational needs based on fish and wildlife.

GEOLOGICAL SURVEY (3)

The Geological Survey was created by the Act of March 3, 1879 (20 Stat. 394; 43 U.S.C. 31), which provided for "the classification of the public lands and the examination of the geological structure,

mineral resources, and products of the national domain." Subsequent legislation expanded this authority to include such investigations outside the public domain, topographic mapping and chemical and physical research, and general dissemination of maps, atlases, monographs, bulletins, water supply papers, professional papers, and other documents.

The broad objectives of the Geological Survey are to conduct surveys, investigations, and research concerning topography, geology, and the mineral and water resources of the United States; classify land as to mineral character and water and power resources; furnish engineering supervision for power permits and Federal Power Commission licenses; enforce departmental regulations applicable to oil, gas, and other mining leases, permits, licenses, development contracts, and gas storage contracts; and publish and disseminate data relevant to these various activities.

The Survey's responsibility in the area of water resources is to determine the source, quality, quantity, distribution, movement, and availability of both surface and ground waters. This includes investigations of floods and droughts, their magnitude, frequency and relation to climatic and physiographic factors; the evaluation of available waters in river basins and groundwater provinces, including water requirements for industrial, domestic, and agricultural purposes; the determination of the chemical and physical quality of water resources and the relation of water quality and suspended sediment load to various parts of the hydrologic cycle; special hydrologic studies of the interrelations between climate, topography, vegetation, soils, and the water supply; and research to improve the scientific basis of investigations and techniques.

Scientific and technical assistance in hydrologic fields is provided to other Federal agencies. In accordance with Bureau of the Budget Circular No. A-67, the Geological Survey coordinates Federal water data acquisition activities, including; designing and operating a national water data network, on a partnership basis with the states and their subdivisions; organizing the national network data; and maintaining a central catalog of information on water data and acquisition activities. The results of these investigations are published in the series of Geological Survey publications.

NATIONAL PARK SERVICE (3), (6)

This agency was established by the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1). Subsequent acts, Executive Orders, and proclamations have added to the National Park System and expanded the activities of the Service.

The fundamental objective of the National Park Service is to

promote and regulate the use of national parks, monuments, and similar reservations in conformity with the original legislation, in order to "conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." This extends to the preservation of American antiquities, historic and prehistoric sites and buildings, and properties of national historic or archeologic significance, as well as the operation of recreation areas of national significance. A further objective of the Service is to provide assistance to the states in the management, operation, and development of public park and recreation area facilities.

Because of this responsibility, the National Park Service is interested in the activities of the construction agencies insofar as such activities may affect present or potential areas of the National Park System. In Federal water project studies, the Service is responsible for the historical, archeological, and natural science aspects of all comprehensive river basin planning. Moreover, the Service provides technical assistance for the Bureau of Outdoor Recreation in the areas of that agency's preauthorization studies where the Service has established experience, such as general development planning and related activities.

The National Park Service is also responsible for postauthorization assistance involving development planning, site planning, consultation on the development, interpretation, and operation of recreation areas, reservoir management planning, negotiation of agreements for administration of reservoir recreation areas, and the follow-up on administration of such agreements.

OFFICE OF WATER RESOURCES RESEARCH (1), (2)

This agency was created specifically to fulfill the provisions of the Water Resources Research Act of 1964, as amended (P.L. 88-379; 42 U.S.C. 1961), to the ends of stimulating, sponsoring, and providing for research and training in the fields of water and related resources.

Annual allotments of $100,000 are provided to Water Resources Research Institutes established by state governments at designated state universities, intended to encourage the establishment of these Institutes, and provide them with funds to support a continuing program of basic or applied research and training of scientific personnel. Dollar for dollar matching grants are also provided to these Institutes to meet the necessary expenses of specific water research projects which could not otherwise be undertaken, including the expenses of planning and coordinating regional water resources research

projects by two or more Institutes.

Project grants are also administered to other educational institutions, private foundations, individuals whose training, qualifications, and experience are adequate for the conduct of water research projects, and local, state, and Federal government agencies. These funds support research into any aspects of water problems not otherwise being studied, whose study is responsive to the water research needs of the nation and not otherwise possible.

DEPARTMENT OF TRANSPORTATION

COAST GUARD (2), (3)

The Coast Guard had its origins in 1790, and was established in its present form by the Act of January 28, 1915 (14 U.S.C. 1), as part of the Treasury Department. It was transferred to the Department of Transportation on April 1, 1967, pursuant to the Department of Transportation Act of 1966 (80 Stat. 931).

This military service becomes involved in water resources development through two of its areas of responsibility: the maintenance of navigational aids on the inland and coastal waters of the United States, and the enforcement of certain laws concerning water pollution, particularly the Oil Pollution Act of 1961, relating to oil spills from vessels.

In addition, under the provisions of the Act of September 25, 1961 (P.L. 87-396; 14 U.S.C. 92, 94), the Coast Guard makes its vessels, aircraft, and other facilities available both to marine scientists and researchers, and to students of oceanography and ocean engineering, for the furtherance of their studies.

FEDERAL HIGHWAY ADMINISTRATION (3), (5)

The Bureau of Public Roads, one of the two operating divisions of the Federal Highway Administration, is the agency responsible for the Federal-Aid Highway Program, under 23 U.S.C., as amended. This provides for construction of the Interstate Highway System, and improvement of nearly 900,000 miles of other Federal-aid primary and secondary roads and their urban extensions. Such construction includes culverts, ditches, and all drainage through land required for the roadways; the highway drainage program under the supervision of the Bureau of Public Roads is, consequently, one of the largest governmental programs concerned with water control.

INDEPENDENT AGENCIES

ATOMIC ENERGY COMMISSION (2), (3)

This body was established by the Atomic Energy Act of 1946 (60 Stat. 755) as amended (68 Stat. 919; 42 U.S.C. 2011 et seq.), to provide and administer programs and to encourage private participation in such programs for research and development, international cooperation, production of atomic energy and special nuclear materials, and the dissemination of scientific and technical information. The Commission has the further responsibility to protect the health and safety of the public, and to regulate the control and use of source, by-product, and special nuclear materials.

Among the many programs of the Atomic Energy Commission pursuant to these broad objectives, support is supplied for basic and applied research in biological, medical, and environmental sciences, and training assistance and advisory counseling are made available to personnel of state and local governments to improve the radiological health training of staff members responsible for carrying out radiation control programs. Regulatory and standard-setting responsibility for environmental radiation protection was shifted from the Atomic Energy Commission to the Environmental Protection Agency upon the latter's creation.

ENVIRONMENTAL PROTECTION AGENCY (1), (2), (3), (5)

This agency was established by Reorganization Plan No. 3 of 1970, effective December 2, 1970, consolidating and subsuming agencies, bureaus, boards, divisions, and functions from three Cabinet Departments and three other independent agencies. It now has primary responsibility for regulation of air and water pollution and solid wastes, and for controlling the environmental effects of pesticides and radiation.

Most of the Environmental Protection Agency's responsibilities are those of the former Federal Water Quality Administration of the Department of the Interior. The Federal Water Quality Administration, previously named the Federal Water Pollution Control Administration, was abolished, and all of its legal authority, responsibilities, and activities assumed by the new agency. Certain other pesticide research authorities of the Department of the Interior have also been absorbed.

The contribution of the Department of Health, Education, and Welfare to the Environmental Protection Agency includes the National Air Pollution Control Administration; the Environmental Health Service, comprising the Bureaus of Solid Waste Management,

Water Hygiene, and a portion of the Bureau of Radiological Health; and the pesticides research and standard-setting program of the Food and Drug Administration.

The pesticides registration authority of the Department of Agriculture was transferred to the Environmental Protection Agency, giving it the responsibility of actually licensing pesticides for use after considering environmental and health effects.

The Council on Environmental Quality was not superceded, but its authority to foster and conduct general ecological research was transferred. The Atomic Energy Commission's responsibility for setting standards for environmental radiation was similarly moved, but the Commission retains its enforcement role through its licensing powers. Lastly, the Federal Radiation Council was abolished and all of its functions transferred to the Environmental Protection Agency.

The principal Federal water pollution legislation is the Federal Water Pollution Control Act of 1956, as amended in 1961, 1965, 1966, and 1970 (P.L. 84-660; 33 U.S.C. 466 et seq.). Under this law, the Environmental Protection Agency pursues a broad spectrum of activities for the measurement, control, abatement, and prevention of water pollution, including project and formula grants, training of personnel, dissemination of technical information, advisory services and counseling, provision of other specialized services, and use of Federal facilities and equipment.

The Environmental Protection Agency develops and executes comprehensive and special programs for pollution abatement in interstate waters and their tributaries. Technical planning assistance is given to state, local, or regional agencies to develop water quality plans for river basins or parts thereof; these plans serve as the basis for the establishment of waste treatment facilities and other pollution control improvements needed to meet desired water objectives, in a multiple-purpose context, and consistent with prescribed water quality standards. Also, grants are awarded to states, interstate, and interagency bodies to cover the administrative expenses of developing comprehensive water quality control and pollution abatement plans in river basins, and for establishing and maintaining pollution control measures, including surveillance and enforcement, training, abatement studies and planning, and public information.

Among other things, the agency advises on the inclusion of streamflow regulation for water quality control in Federal water projects, on the understanding that this technique not be used as a substitute for more direct pollution control measures.

Advice, counseling, and technical information are furnished to appropriate state and interstate agencies to encourage the various

states to enact improved and as far as practical, uniform water pollution control laws, and to encourage compacts among the states for water quality management. State enforcement authorities are encouraged, and Federal authority is exercised as needed, to correct pollution and violations of water quality standards on interstate or navigable waters.

The Environmental Protection Agency furnishes grants for projects designed to establish, develop, elucidate, demonstrate, or confirm techniques and information concerning the causes, control, and prevention of water pollution. Pollution control data is collected, analyzed, and made available to the general public, showing types, trends, and progress in pollution control and prevention, and state, interstate, and local water pollution control agencies are given access to the STORET system, the central computer facility for storage and retrieval of water quality and pollution control data, through the telecommunications facilities of the Environmental Protection Agency's regional and field offices.

A major function of the Environmental Protection Agency is the awarding of grants for the construction of waste treatment works to state, municipal, intermunicipal, and interstate agencies. Such grants can range from 30 to 55 percent of eligible project costs with no monetary limit. Advice, information, and assistance are also supplied to help such agencies to apply existing pollution surveillance and control technology beyond the limitations of their own technical and administrative resources.

The objective of adequate numbers of properly trained personnel to execute pollution control programs is pursued through direct training, counseling and technical information to aid state and local agencies in obtaining the necessary funding under a variety of Federal programs, and grants to public and private universities to build staff and facilities, develop curricula and courses, and increase numbers of trained professionals in water pollution control. Research fellowships are administered to promote and encourage those qualified professionals in the specialized research training related to the causes, prevention, control, and management of water pollution.

It is also the role of the Environmental Protection Agency to implement the provisions of those Executive Orders prescribing policies and procedures for the prevention, control, and abatement of water pollution by Federal activities, including facilities or operations supported by Federal loans, grants, or contracts.

The public health aspects of water pollution control which the Environmental Protection Agency inherited from the Environmental Health Service have their basic authorization in the Public Health Service Act of 1944, P.L. 78-410, as amended (58 Stat. 682; 42 U.S.C.

201 et seq.). These considerations encompass pollution of water used for recreation or human consumption; the need for and value of inclusion of storage in Federal reservoirs for water quality control through streamflow regulation; advice to state and Federal agencies on control of possible disease vector problems in the construction of specific water impoundments; publishing of regulations relative to interstate quarantine and the certification of water supplies for vessels and carriers engaged in interstate commerce; and promotion of appropriate standards and practices for adoption by public and private water supply utilities.

EXECUTIVE OFFICE OF THE PRESIDENT

Council on Environmental Quality (3). This advisory body was created by the National Environmental Policy Act of 1969 (P.L. 91-190, 83 Stat. 852; 42 U.S.C. 4321 et seq.), to formulate and recommend national policies to promote the improvement of the quality of the environment. The Office of Environmental Quality, which provides staff for the Council, was subsequently established by the Environmental Quality Improvement Act of 1970 (P.L. 91-224, Title II, 84 Stat. 114; 42 U.S.C. 4372).

Pursuant to Section 3 of Executive Order 11514, the responsibilities of the Council include an ongoing review of Federal pollution control policies and procedures, and evaluation of the need for new policies and programs dealing with inadequately resolved environmental problems; recommendation to the President and Federal agencies of priorities among programs designed for the control of pollution and the enhancement of the environment; coordination of Federal programs relating to environmental quality; and assisting the President in the preparation of the annual Environmental Quality Report. Authority to foster and conduct general ecological research was later transferred from the Council on Environmental Quality to the Environmental Protection Agency.

National Council on Marine Resources and Engineering Development (3). This body was established in the Executive Office of the President by the Marine Resources and Development Act of 1966 (80 Stat. 203; 33 U.S.C. 1101), as amended by the acts of January 2, 1968 and May 23, 1969. The Council provides advice and assistance to the President with regard to his responsibilities to develop and maintain a coordinated, comprehensive, and long-range national program to assure that marine science and technology are most effectively used in the interests of national security and the general welfare.

More specifically, the Council acts to review on an annual basis all significant marine science activities, including policies, plans, programs, and accomplishments of all Federal agencies working in this area and develop a comprehensive program in marine science activities

for such Federal agencies, assigning responsibilities for these activities among them, and insuring cooperation and resolving differences among the agencies. It is involved in comprehensive study of legal problems relating to marine resources, and long-range studies of the potential benefits of marine science activities to the United States. Under the foreign policy guidance of the President, it coordinates a program of international cooperation in work done pursuant to this act. Finally, it provides policy guidance to the National Oceanic and Atmospheric Administration on sea grant programs, and prepares the President's annual report to the Congress on marine science affairs.(The Council was terminated 30 April, 1971, due to lack of funds.)

Office of Emergency Preparedness (2), (3), (5). This body, a renaming of the Office of Emergency Planning by the act of October 21, 1968 (82 Stat. 1194; 50 U.S.C. App. 2271 n.), has been designated by the President to administer the Federal disaster assistance program, as set forth in the Federal Disaster Act, as amended (P.L. 81-875;42 U.S.C. 1855-1855g). The Act enables states and local governments to receive supplemental Federal assistance when the President declares a major disaster. A major disaster may be declared in the event of war, earthquake, flood, hurricane, or other disaster. The administration of the disaster assistance program includes the authority to coordinate and direct the disaster relief activities of all Federal agencies, and to administer the disaster relief funds made available by Congressional appropriation to the President. After the President declares a major disaster, the Office of Emergency Preparedness may direct any Federal agency to provide the needed assistance in the stricken area.

In the field of water resources, the objective of the emergency program is to assure adequate safe water for human survival and for essential services and industry, including livestock and agriculture requirements, through effective management and use of water resources during the emergency and the recovery period; conservation and effective use of manpower, materials, equipment, and supplies required for water supply operations; and operation, repair, and restoration of facilities to provide water for essential needs.

FEDERAL POWER COMMISSION (5)

The basic authority for the water resources activities of the Federal Power Commission is the Federal Power Act, as amended (16 U.S.C. 791a-825r). This Act was adopted in 1935 by including as Part I the Federal Water Power Act of 1920 relating to the licensing of non-Federal hydroelectric projects, and by adding Parts II and III vesting the Commission with jurisdiction over the transmission and sale at wholesale of electric energy in interstate commerce and public utilities engaged therein.

The Commission is enpowered to make investigations and to collect and record data concerning the utilization of water resources in any region to be developed; to cooperate with other agencies of state and Federal governments in water resources investigations; to review and evaluate the water power features of Federal multiple-purpose river basin planning studies; and, subject to provisions contained in the Act, to issue licenses for periods not in excess of 50 years to non-Federal entities for the purpose of constructing, operating, and maintaining dams, water conduits, reservoirs, or other facilities for the development of hydroelectric power in or affecting navigable waters or on Government lands, or utilizing surplus water from Government dams.

The projects to be licensed must, in the judgment of the Commission, be best adapted to a comprehensive basin plan for various beneficial purposes, including recreation; and the Commission supervises and inspects such projects to assure continuing compliance with these public interest standards. The Act provides that the United States shall have the right, upon two years' written notice by the Commission, to take over projects licensed to non-public entities upon the expiration of the licenses. The Commission is directed to determine the charges to be paid by a licensee or the non-Federal owner of an unlicensed project for benefits provided by headwater improvements of another licensee or of the United States, to determine the effect on power site values of proposed entries, locations or selections of public lands reserved for power sites, and to act upon applications for right-of-way, use permits, and leases affecting such sites.

The Flood Control Act of 1938 and subsequent Flood Control and River and Harbor Acts authorize the Commission to investigate the power potentialities at projects to be constructed by the Department of the Army, and charges the Commission with the responsibility of making recommendations to the Secretary of the Army with regard to the installation of penstocks or similar facilities adapted to possible future use in the development of hydroelectric power at such projects.

Section 5 of the Flood Control Act of 1944 requires prior approval by the Federal Power Commission of rate schedules for the sale by the Secretary of the Interior of electric power and energy generated at reservoir projects under the control of the Department of the Army, and, in the opinion of the Secretary of the Army, not required in the operation of the projects.

INTERSTATE COMMERCE COMMISSION (3)

This agency was created as an independent establishment by the Act to Regulate Commerce of February 4, 1887 (24 Stat. 379, 383; 49 U.S.C. 1-22), now known as the Interstate Commerce Act. The

Commission's authority has been strengthened and the scope of its jurisdiction has been broadened by subsequent legislation, such as the Hepburn Act, the Panama Canal Act, the Motor Carrier Act of 1935, and the Transportation Acts of 1920, 1940, and 1958.

The Commission's jurisdiction over water carriers dates back to its original creation. In broad terms and within prescribed legal limits, its regulatory powers encompass transportation economics and service.

In the realm of transportation economics, the Commission settles controversies over rates and charges among competing and like modes of transportation, shippers and receives of freight, passengers, and others. It rules upon applications for mergers, consolidations, acquisitions of control, and the sale of carriers and issuance of their securities; it acts to prevent unlawful discrimination, destructive competition, and rebating.

In the transportation service area, the Commission grants operating rights to water carriers and administers regulations relating to such operations.

NATIONAL SCIENCE FOUNDATION (2), (3)

This body was established by the National Science Foundation Act of 1950 (64 Stat. 149; 42 U.S.C. 1861-1875), and was given additional authority by the National Defense Education Act of 1958 (72 Stat. 1601; 42 U.S.C. 1876-1879) and by the National Sea Grant College and Program Act of 1966 (80 Stat. 998; 33 U.S.C. 1121-1124).

The fundamental purpose of the National Science Foundation is to strengthen research and education in the sciences in the United States; among its many activities pursuant to this goal are several bearing on water resources. Grants and contracts are awarded to universities and other nonprofit institutions, and fellowships and traineeships to graduate students, for work in the hydrologic, biological, environmental and sanitary engineering sciences, among others. Contract support is given to major research centers where large facilities are made available to qualified scientists; one such is the National Center for Atmospheric Research. The development and use of computer and other scientific methods and technologies is supported, and pursuit is made of improving the coordination of the various scientific information activities within the Federal government, developing new or improved methods of making scientific information available, and fostering the interchange of scientific information among scientists of the United States and foreign countries.

NATIONAL WATER COMMISSION (3)

The Commission was established by the Act of September 26, 1968 (82 Stat. 868, 42 U.S.C. 1962a note), to consider ways of meeting U.S. water requirements in the future, including more efficient use of water, reduction of water pollution, interbasin transfers, and the use of various technological advances such as weather modification and desalinization; to consider economic, social and esthetic consequences of water resources development; and to advise on such specific water resources matters as may be referred by the President and the Water Resources Council, and to submit reports on its studies to the President and the Congress.

The seven man Commission is to terminate not later than September 26, 1973.

WATER RESOURCES COUNCIL (2), (6)

This interagency body was established by one of the provisions of the Water Resources Planning Act of 1965 (P.L. 89-80; 42 U.S.C. 1962a). Title II of this legislation authorized, through the Council, the establishment of river basin commissions, and Title III provided for financial assistance to the states to increase state participation in coordinated planning for the nation's water and related land resources. The Water Resources Planning Act, a major statement of policy, declares that, in order to meet the rapidly expanding demands for water throughout the nation, it is the policy of the Congress to encourage the conservation, development, and utilization of water and related land resources of the United States on a comprehensive and coordinated basis by the Federal government, states, localities, and private enterprise, with the cooperation of all affected Federal agencies, states, local governments, individuals, corporations, business enterprises, and others concerned.

The Water Resources Council comprises the Departments of Agriculture; the Army; Health, Education, and Welfare; the Interior; Transportation; and the Federal Power Commission. The Departments of Commerce and Housing and Urban Development, and the Environmental Protection Agency, are Associate Members; the Office of Management and Budget, Council on Environmental Quality, Justice Department, and Title II river basin commissions are Observers.

The Council has the responsibility biennially to prepare an assessment of the adequacy of water supplies in each water resource region of the United States, and of the national interest therein; to maintain a continuing study of the relation of regional or river basin plans and programs to the requirements of larger areas of the nation; and to appraise the adequacy of administrative and statutory means for coordination and implementation of the water

and related land resources policies and programs of the several Federal agencies, and make recommendations to the President with respect to these policies and programs.

The Council must determine, after appropriate consultation and with the approval of the President, principles, standards, and procedures for Federal participation in the preparation of comprehensive regional or river basin plans, and the formulation and evaluation of Federal water and related land resources projects; it must also coordinate schedules, budgets, and programs of Federal agencies in comprehensive interagency regional or river basin planning.

The Water Resources Council carries out responsibilities regarding creation, operation, and termination of Federal-interstate river basin commissions, receiving plans from them and transmitting these, with its own recommendations, to the President.

The Council also administers a program of grants to the states, under Title III of the Water Resources Planning Act, to aid in financing state preparation of water and related land resources plans, participation in Federal-state comprehensive water and related land resources planning, and training of personnel as needed to develop additional planning capability. The size of the grant is based, in a complicated way, on a given state's population, land area relative to the country as a whole, need as determined by the Water Resources Council, and per capita income relative to the country as a whole.

Interagency Committees. The field interagency committees were chartered by the Interagency Committee on Water Resources, and are now under the aegis of the Water Resources Council. The committees' objectives are to provide, in their particular geographical area, improved facilities and procedures for the coordination of policies, programs, and activities of their members in the field of water and related land resources investigations, planning, construction, operation, and maintenance; to provide means by which conflicts may be resolved; and to provide procedures for coordination of their interests with other Federal, local governmental and private agencies in the water and related land resources field. The committees coordinate the collection and interpretation of basic data; investigation and planning of relevant projects and programs; and programming and scheduling of construction and development.

River Basin Commissions. Each Title II river basin commission is an interstate-Federal cooperative body which, given certain requirements, is established at the request of either the Water Resources Council or the states involved. Each commission serves as the principal coordinator and leader of planning on all levels for the development of water and related land resources within its domain (which may be a group of related river basins, a single

complete basin, or a subbasin area). It must prepare and maintain a comprehensive, coordinated, joint plan for Federal, interstate, state, local, and nongovernmental development of water and related land resources; recommend long-range schedules of priorities for data collection and analysis and for investigation, planning, and construction of projects; and conduct such studies of water and related land resources problems as the comprehensive plan necessitates. The plan, revised as needed, must be submitted to the Council, along with appropriate suggestions for its further revision and implementation. However, although the Title II Commission's powers of planning and coordination leadership extend to every aspect of water and related resource use within its region, it has no authority to regulate, acquire, or operate facilities.

The New England River Basins Commission is, at present, the only Title II commission within the boundaries of the NAR, although some states with area within the NAR belong to commissions outside it, such as the Ohio River Basin Commission and the Great Lakes Basin Commission.

In addition to Title II commissions, formed under the aegis of (and therefore closely associated with) the Water Resources Council, there are also river basin and other interstate organizations formed directly by compact among the states involved and the Federal government. These include the Delaware River Basin Commission, the Susquehanna River Basin Commission, and the proposed Potomac River Basin Commission. The powers of these broadly similar agencies comprise not only playing a primary role in planning and coordination within their basins, but also in the acquisition, direct operation, maintenance, sale, leasing, and regulation of facilities and services therein. Their association with the Water Resources Council is only a loose and informal one.

A fuller discussion of the Title II commissions, the aforementioned interstate compact organizations, and a number of other cooperative interstate bodies is located in Section III of this appendix.

FEDERAL GRANT PROGRAMS (3), (4)

There are basically three ways in which the Federal government contributes to projects of regional or local benefit: directly, indirectly, and financially. Direct participation involves research, planning, preparation, construction, operation, or maintenance (or any combination of these) of one or more elements of a project by the Federal government itself, presumably because its superior resources and jurisdictional scope enable these functions to be fulfilled more economically than otherwise. Indirect aid includes services of information, advice, and assistance for activities of other levels of government in research, planning, engineering, and technical areas, as well as use of Federal facilities; the same rationale for Federal action applies as in the case of direct participation. Financial aid may be in the form of direct grants, either tied to a specific purpose or not, loans (possibly with zero or lower-than-market interest rates), repayable or nonrepayable advances, and purchase or underwriting of bond issues.

It should be noted that every form of Federal activity--direct participation, indirect assistance, and financial aid--represents a financial benefit to other levels of government, in that they are spared the expense of their own resources in each instance. This is clearest in the case of financial aid. But financial aid, as indicated above, appears in many forms. Grants may be for specific projects, or they may be formula grants, in which the size of the grant depends by formula on certain criteria: population, income, geographical area, etc. In general, there is a matching requirement to be met by the recipient. Direct loans may be made at zero or less-than-market interest rates, or, if at market rates, in an amount greater than would ordinarily be available. Noninterest-bearing advances are usually repayable, but may be made nonrepayable if certain conditions are met, depending on the particular program. A bond issue of a state, local, or nongovernmental agency may be guaranteed or purchased outright, or a loan made to such an agency might be guaranteed or insured. All of these financial tools are found in Federal programs, employed singly or in various combinations, in various proportions, and at various absolute dollar levels; but all have precisely the same economic significance, the amplification of the scarce financial resources of the recipient.

Accordingly, the table that follows is restricted to direct financial aid, but shows the various forms in which this aid appears in the several water and related land resources activities of the interested Federal agencies.

Detailed information concerning the specific programs of these agencies may be found in the Office of Economic Opportunity's

Catalog of Federal Domestic Assistance (2), the extremely comprehensive definitive reference in this area.

At least passing mention must be made of a possible future change of major dimensions in Federal grant programs: large-scale sharing of Federal revenues with state and local governments, as proposed by the President in his State-of-the-Union Address of January 22, 1971. These funds would be made available partly in the form of grants tied to specific, if broad, purposes, and partly as completely untied grants, to be applied as the recipient sees fit. While not conceptually different in their economic impact from tied grants already discussed, untied grants would represent an endowment of economic initiative of a distinctly higher order to their beneficiaries.

TABLE S-2(FED)

FINANCIAL AID PROGRAMS OF FEDERAL AGENCIES DEALING WITH WATER AND RELATED LAND RESOURCES

Key: a--project or formula grants b--direct loans c--advances d--guarantee of bond issue or loans	Department of Agriculture						Dept. of Commerce
	Agric. Stabilization and Conservation Svce.	Farmers Home Administration	Federal Extension Svce.	Forest Service	Soil Conservation Service	Economic Development Administration	National Oceanic and Atmospheric Admin.
WATER SUPPLY		a b c d			c	a b c	
FLOOD CONTROL		b c		a	a	a b c	
NAVIGATION							
IRRIGATION, DRAINAGE, AND LAND MANAGEMENT	a	b c d	a	a	a		
WATER POLLUTION CONTROL AND WASTE WATER DISPOSAL	a	a b c d				a b c	
FORESTRY	a	b c d	a	a			
RECREATION		b c d	a	a			
FISH AND WILDLIFE CONSERVATION	a	b c			a		a
WATER-BORNE TRANSPORTATION						a b c	
HYDROELECTRIC POWER							
HYDROLOGICAL AND GEOLOGICAL RESEARCH							
MARINE SCIENCES							a
MINING AND MINE WATER DISPOSAL							
WEATHER AND ATMOSPHERIC RESEARCH							
ECONOMIC AND STATISTICAL RESEARCH							

TABLE S-2(FED)Cont'd

FINANCIAL AID PROGRAMS OF FEDERAL AGENCIES DEALING WITH WATER AND RELATED LAND RESOURCES

Key:
a--project or formula grants
b--direct loans
c--advances
d--guarantee of bond issues or loans

	Department of the Interior					Dept. of Transp.
	Department of Housing and Urban Development	Bureau of Mines	Bureau of Outdoor Recreation	Fish and Wildlife Service	Office of Water Resources Research	Federal Highway Administration
WATER SUPPLY	a b c d					
FLOOD CONTROL						
NAVIGATION						
IRRIGATION, DRAINAGE, AND LAND MANAGEMENT						a
WATER POLLUTION CONTROL AND WASTE WATER DISPOSAL	a b c d	a				
FORESTRY						
RECREATION			a	a		
FISH AND WILDLIFE CONSERVATION				a b c		
WATER-BORNE TRANSPORTATION						
HYDROELECTRIC POWER						
HYDROLOGICAL AND GEOLOGICAL RESEARCH					a	
MARINE SCIENCES						
MINING AND MINE WATER DISPOSAL						
WEATHER AND ATMOSPHERIC RESEARCH						
ECONOMIC AND STATISTICAL RESEARCH						

TABLE S-2(FED)Cont'd

FINANCIAL AID PROGRAMS OF FEDERAL AGENCIES DEALING WITH WATER AND RELATED LAND RESOURCES

Key:
a--project or formula grants
b--direct loans
c--advances
d--guarantee of bond issues or loans

	Atomic Energy Commission	Environmental Protection Agency	National Science Foundation	Water Resources Council		
WATER SUPPLY		a		a		
FLOOD CONTROL				a		
NAVIGATION				a		
IRRIGATION, DRAINAGE, AND LAND MANAGEMENT				a		
WATER POLLUTION CONTROL AND WASTE WATER DISPOSAL	a	a	a	a		
FORESTRY				a		
RECREATION				a		
FISH AND WILDLIFE CONSERVATION				a		
WATER-BORNE TRANSPORTATION				a		
HYDROELECTRIC POWER				a		
HYDROLOGICAL AND GEOLOGICAL RESEARCH			a	a		
MARINE SCIENCES						
MINING AND MINE WATER DISPOSAL				a		
WEATHER AND ATMOSPHERIC RESEARCH			a			
ECONOMIC AND STATISTICAL RESEARCH			a			

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PART II

STATE LAWS, POLICIES AND PROGRAMS

PART II
STATE LAWS, POLICIES AND PROGRAMS
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STATE LAWS, POLICIES AND PROGRAMS

INTRODUCTION

The fourteen reports included herein have been prepared by representatives of each of the states in the North Atlantic Region, and the District of Columbia, presenting brief descriptions of those laws and Institutional structures which embrace water and related land resources.

In response to the growing demand for stronger emphasis on environmental protection, these states are presently engaged in extensively reorganizing those of their agencies interested in protecting their environment and resources, including water and related land resources. Since each state is not at the same stage of the reorganization process, the reports vary in scope, length, and comprehensiveness.

What could be written today about a state would, in many instances, be obsolete tomorrow. Consequently, the purpose of this section is to present, as accurately as possible, a summary of the legal and institutional environment of each state and the District of Columbia at least as of the middle of 1970. Several have been updated to 1971 or 1972. Should more complete up-to-date information be desired, the state in question should be contacted directly.

As the NAR Study is revised and up-dated in the future, a more complete and timely analysis of the legal and institutional environment may be available; at present, however, the intent of this summary is necessarily limited to furnishing general outlines and providing points of reference.

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STATE OF MAINE

Prepared by

Maine State Planning Office
Water Resources Planning

January 1972

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STATE OF MAINE

I-State Law

STATE CONSTITUTION

The Constitution of Maine makes no direct statements of principles and concepts relative to water resources. However, there are two sections that bear heavily on the uses of these resources. Article I of the Declaration of Rights gives the State certain rights of eminent domain, and Article X leaves in force, among other laws, the Colonial Ordinances of 1641 - 47, which reserve to public use great ponds (10 or more acres) and certain navigable waters and tide lands.

STATUTES *

A number of statutes that pertain to water and related resources in Maine have been legislated since the time of Maine statehood in 1820. Abstracts of the more significant legislation are listed here.

Title 5 Administrative Procedures and Services

c.311, ss.3301-3307:
Known as the "Maine State Planning Act"; establishes a State Planning Office in the Executive Department with the general concern of coordinating and developing the several planning responsibilities of the State Government.

Title 10 Commerce and Trade

c.3, s.51:
Endorses the Federal Atomic Energy Act of 1954; recognizes the need for laws and regulations in connection with the development of industries producing or utilizing atomic energy and other forms of radiation, with respect to the conservation of natural resources, including wildlife and the protection of streams, rivers, and airspace from pollution.

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* Adapted from: Maine Dept. of Economic Development, "Public Laws of the State of Maine Relating to Conservation of Natural Resources and Environmental Protection and Improvement," 1970.

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c.101, ss.401-405, 451, 500, 501, 551, 552, 611:
Creates a Department of Economic Development and authorizes appoitment of a Commissioner of Economic Development.

c.401, ss.2101-2106, 2108-2111:
Establishes a Maine Mining Bureau to administer, regulate and control mineral development and mining on State lands, inland waters and offshore territory of the State, and natural resource conservation as it relates to mineral and oil and gas development.

c.401, ss.2151-2166:
Known as the "Oil and Gas Conservation and Development Control Act"; prohibits the waste of oil and gas generally; authorizes and assigns the Maine Mining Bureau the duty to prevent waste of oil and gas and related materials, to protect correlative rights, to prevent pollution, and to make such regulations, issue permits, and collect fees as necessary, with Bureau authority applying to all State lands and submerged lands on the continental shelf under State jurisdiction.

c.451, ss.2201-2216:
Provides for the reclamation of lands where mining operations are conducted so as to encourage their productive use; creates a Maine Mining Commission with powers to adopt rules and regulations and to exercise administration and enforcement of this chapter, and to conduct investigations and research and to collect and disseminate information relating to reclamation of lands and waters affected by mining.

Title 12 Conservation

Part 1 Soil Conservation

c.1, ss.1-7:
Known as the "Soil and Water Conservation Districts" law authorizes the formation of soil and water conservation districts to provide for the conservation of soil and water resources and for the control and prevention of soil erosion.

c.3, ss.211-212:
Provides for State contribution to the Cooperative Soil Survey conducted nationally by the U.S. Department of Agriculture, Soil Conservation Service.

Part 2 Forest, Parks, Lakes and Rivers

c.201, ss.501-506, 508, 509, 511-516:
Establishes the office of Forest Commissioner and describes

the functions and responsibilities of the department - the supervision and control of State lands, establishment of forest nurseries, reforestation and rehabilitation programs, disease and fire protection of forest and shade trees, research in the field of forestry, advice and assistance in the utilization and marketing of wood products, and the dissemination of informational and educational materials; authorizes the commissioner to accept federal, municipal and private funds, to sell or convey certain public lands under specified conditions, to sell gravel, timber and grass rights, to grant mining rights, and to issue various permits.

c.201, s.531:
Establishes the Division of Science, Technology and Mineralogy to administer the programs of the Maine Geological Survey and provide administrative and fiscal assistance to the Maine Mining Bureau.

c.203, ss.601-608:
Establishes the Maine State Park and Recreation Commission and assigns to this agency the jurisdiction, custody and control of all State parks, memorials, and any national parks which are under the control and management of the State, excepting *Baxter State Park*.

c.204, ss.631-633:
Establishes a Keep Maine Scenic program, including necessary research education, promotion, and enforcement, to be maintained by the Maine State park and Recreation Commission for the protection of Maine's natural beauty and the elimination of offensive litter and other unsightly conditions on roadsides, streets, waterways, beaches, parks, and other public areas.

c.206, ss.661-680:
Establishes and defines the area designated as the Allagash Wilderness Waterway and provides for its preservation and protection.

c.206-A, ss.681-689:
Creates a Maine Land Use Regulation Commission for purposes of extending sound planning, zoning and subdivision control to unorganized and deorganized townships of the State.

c.209, ss.751-755:
Grants State of Maine consent, within certain limitations, to federal acquisition of lands deemed necessary for the establishment and extension of national forests, and to the establishment by the Congress of such rules and regulations as may be necessary for the administration, control and protection of

such lands; reserves the right of the State to regulate storage, control, use or development of all water resources, and to maintain jurisdiction over civil and criminal offenses by persons upon such lands.

Part 3 Inland Fish and Game

c.303, ss.1951-1965A
Establishes and defines the office of Commissioner of Inland Fisheries and Game.

c.309, ss.2101-2108:
Designates and delineates specific areas as game preserves and sanctuaries: empowers the Commissioner to create temporary game sanctuaries and game farms.

c.311, ss.2151-2155:
Pertains to the acquisition of land for fish hatcheries and game management areas, and regulations of their public use.

c.313, ss.2201-2205:
Establishes regulations applying to the construction and repair or destruction of fishways and dams and to the bulldozing of rivers, streams, and brooks.

Part 4 Sea and Shore Fisheries

c.403, ss.3451-3452:
Defines the purposes and general organization of the Department of Sea and Shore Fisheries.

c.405, ss.3501-3506:
Establishes and defines the office of Commissioner of Sea and Shore Fisheries.

c.409, ss.3601-3604:
Authorizes the appointment of an Atlantic Sea Run Salmon Commission.

c.413, ss.3701-3705, 3708:
Authorizes the Commissioner of Sea and Shore Fisheries to initiate scientific research relative to marine life and prescribes procedures for taking flats or waters for such purposes.

c.419, ss.4602-4613, 4651-4656:
Authorizes an Atlantic States Marine Fisheries Compact to promote better utilization of the marine, shell and anadromous fisheries of the Atlantic seaboard.

Part 5 Wetlands

c.421, ss.4701-4709:
Establishes a Wetlands Control Board to regulate the removal, filling, dredging or draining of sanitary sewage into a flat or other wetland bordering tidal waters.

Part 6 Realty Subdivisions

c.423, ss.4801-4806:
Requires all lots or parcels of land used for single family residential purposes and not served by public sewer to be a minimum of 20,000 square feet in size, unless approved by the Department of Health and Welfare on the bases of percolation and other soil analyses; establishes land size requirements for multiple unit housing and planned unit development.

Part 7 State Level Land Use Controls

c.424, ss.4811-4814:
Referred to as the "shoreland zoning act", grants to the State the power to establish land-use standards for all areas within 250 feet of any navigable inland or tidal waters.

Title 17 Crimes

c.79, ss.2251-2253:
Prohibits the dumping or deposit of litter, refuse, trash or garbage upon any public way, public bathing place, public park or any other place, or into any inland or tidal waters or on the ice over such waters, or on adjacent banks; establishes specific prohibitions against the deposit of sawdust upon any highway, and the deposit of any waste matter originating outside the State in any structure or on any land within the State.

c.91, ss.2800-2802:
Prohibits the erection of a dam and the creation of flowage areas without the cutting and removal of all trees, bushes and stumps from the area; prohibits the erection, continuance or use of any building or place in an activity which by noxious exhalations, offensive smells or other annoyances becomes injurious or dangerous to the public health, comfort or property; prohibits pollution of any river, stream or pond, unlawful diversion of waterways from their natural course or state, and obstructing or impeding without legal authority any navigable river, harbor or body of water.

Title 23 Highways

c.3, s.153:
Authorizes the State Highway Commission, among other things, to take over and hold such property as it deems necessary to provide roadside and landscape development for the preservation and development of natural scenic beauty.

c.3, ss.231-235:
Creates a Scenic Highway Board for the general purpose of establishing a system of scenic highways in the State and preserving scenic values along the system.

Title 22 Health and Welfare

c.258, ss.1451-1465:
Establishes a Board of Pesticides Control to regulate the sale and application of pesticides.

Title 30 Part 2 - Municipalities

c.215, ss.2451-2460:
Declares junk yards and "auto graveyards" to be a public nuisance subject to regulation and control.

c.217, ss.3251-3262:
Authorizes court appointed commissioners to effect necessary or useful improvements on meadows, swamps, marshes, beaches or other low lands held jointly by several proprietors.

c.221, s.3553:
Authorizes a municipality singly or jointly with others to acquire real estate or easements by condemnation procedures for town ways, and to contract with the State and Federal Governments to comply with federal requirements for projects approved by the Governor for improving harbor and river nagivation or preventing property damage by erosion or flood.

c.227, ss.3751-3758:
Authorizes cities and towns to acquire lands by purchase, gift or bequest for purposes of forestation.

c.229, ss.3801-3804:
Enables municipalities to receive, hold and manage devises, bequests or gifts for the establishment, increase or maintenance of public parks, playgrounds and open areas including marshes, swamps and other wetlands, and to set aside land for the preservation of trees along public ways; describes rights of landowners with respect to cutting and clearing land.

c.229, ss.3851-3854:
Authorizes municipalities to establish conservation commissions and appoint commissioners; authorizes commissions to acquire land for conservation purposes.

c.239, ss.4501-4505:
Authorizes the establishment of regional planning commissions and the development of comprehensive regional plans.

c.239, ss.4951-4958:
Authorizes municipalities to establish a planning board, develop a comprehensive plan, and adopt zoning ordinances.

c.241, ss.5103-5106:
Authorizes municipalities to raise or appropriate money, among other things, for projects approved by the Govenor for improving navigation or preventing property damage by erosion or flood, for providing real estate, personal property for recreational purposes and support of recreational programs, and for propagating and protecting fish and public waters located wholly or partially within their boundaries.

Title 32 Professions and Occupations

c.62, ss.4171-4182:
Requires the Environmental Improvement Commission to classify all wastewater treatment plants actually used or intended for use by the public, and establishes regulations applying to the competency and licensing of plant operations.

Title 33 Property

c.11, ss.667-668:
Establishes the enforceability of duly recorded conservation restrictions; authorizes any government body whose purposes include conservation of land or water areas to establish deed restrictions on land in which it has or acquires an interest; authorizes restrictions relative to the construction or placing of buildings, roads, signs, billboards or other advertising, utilities or other structures on or above the ground; the dumping or placing of soil or other substance as landfill, or placing of trash, waste or other offensive materials; the removal or destruction of trees, shrubs or other vegetation; excavation, dredging or removal of material substance; and activities generally detrimental to drainage, flood control, water conservation, erosion control or soil conservation, or fish and wildlife habitat preservation.

Title 36 Taxation

c.211, s.1760:
Exempts from sales and use tax, among other items, the sales

of any water or air pollution control facility, any part or accessories thereof, or any materials for the construction, repair or maintenance of such facilities.

Title 38 Water and Navigation

c.3, ss.361-372:
Establishes an Environmental Improvement Commission to control, abate and prevent the pollution of the air, waters, coastal flats and prevent diminution of the highest and best use of the natural enviroment of the State.

c.3, ss.411-414:
Authorizes the Commission to pay certain shares of the expenses of planning and construction of municipal or quasi-municipal pollution abatement programs which have received federal approval and federal funds for construction, and restricts the discharge or dumping of pollutants into State waters without a duly authorized license.

c.3, ss.416-417:
Regulates the deposition into inland or tidal waters of lumber wastes, oil, and potatoes and potato wastes.

c.3, s.418:
Prohibits log drives on inland waters after October 1, 1976, and regulates storage or curing of logs in water bodies after the same date.

c.3, s.419:
Prohibits the discharge of mercury or any mercury compounds to inland or tidal waters that would increase the natural concentration of mercury in the receiving waters; allows the Environmental Improvement Commission to issue emergency orders prohibiting all further mercury discharges if there is a threat to the public health.

c.3, s.420:
Bans after June 1, 1972 the sale or use of cleaning agents containing more than 8.7% phosphate by weight, except for the purposes of cleaning dairy, food processing, and industrial equipment.

c.3, s.421:
Prohibits location of solid waste disposal areas within 300 feet of any water body; allows the Environmental Improvement Commission to increase distances where necessary; all such existing areas closer than 300 feet must be discontinued after December 1, 1973.

c.3, ss.481:
Authorizes the Environmental Improvement Commission, in consultation with appropriate State agencies, to exercise the police power of the State in controlling the location of developments substantially affecting local enviroment; requires persons intending to construct or operate such developments to give written notice to the Commission, and recieve Commission approval predicated on the developer's meeting the legislatively prescribed standards.

c.3, ss.491-501:
Establishes a New England Interstate Water Pollution Control Commission and directs the Commission to formulate water quality standards and to cooperate with other states signatory to the New England Interstate Water Pollution Control Compact in water pollution control programs.

c.3, ss.541-557:
Confers upon the Environmental Improvement Commission the exclusive power to deal with the hazards and threats to the coastal enviroment of the State posed by transfer or conveyance of oil, petroleum products and byproducts, and related activities.

c.3, ss.581-597:
Prohibits the corrupting of natural waters or reservoirs, well or springs used for domestic or public water supplies.

c.4, ss.581-597:
Declares legislative intent to control and regulate air polluting activities; empowers the Environmental Improvement Commission to establish air quality regions within the State, ambient air quality standards and emission standards; prohibits air contamination generally, allowing for variances, requires registration of persons engaged in air polluting activities; authorizes municipal air pollution control and abatement ordinances consistant with or more stringent than State law.

c.5, ss.611-612:
Establishes liability of lumber mill owners or mortgagees with respect to obstructing or diverting waters of rivers or streams; defines applicability of mill and dam regulations; establishes regulations applying to streams forming State boundaries.

c.5, ss.651-659:
Establishes regulations applying to the erection and maintenence of milldams and canals, the diversion of natural waterways and creation of flowage areas, the removal of timber on flowed lands, and damages caused by flowages.

c.5, ss.931-933:
Establishes regulations governing the creation and operation of water storage reservoirs, eminent domain authorization, assessment of damages incurred.

c.9, ss.1021-1026:
Establishes regulations governing the location and construction of wharves and fish weirs, and license to expand or erect such structures.

c.11, ss.1061-1067:
Authorizes the Environmental Improvement Commission to approve the creation of sanitary districts consisting of a municipality or two or more municipalities of sufficient size to economically construct and operate sewage systems so as to assist in the pollution abatement of State waters; exempts sanitary districts from taxation; provides for reimbursement of costs to participating municipalities when the district is financially able.

c.11, ss.1201-1209:
Authorizes a sanitary district to borrow money and issue bonds or notes to finance its operations; establishes regulations applying to rates and assessments.

WATER RIGHTS

Doctrine

Riparian Doctrine*. Maine, like the other Eastern states is a riparian state. It adheres to a system under which private rights to the use of water flowing in watercourses are based on ownership of land in some way contiguous to the stream (riparian land). Each riparian landowner has equal rights vis-a-vis other similar owners to the use of water irrespective of whether the water is actually used.

To be entitled to the use of the water, one must be a riparian owner, which is defined as one whose land extends beyond the water's edge to some portion of the river bed. How much back land may be considered riparian land has not been adjudicated, but it appears that it must be in the same watershed. Unless otherwise stipulated or detached by previous grant, a grant of

*Adapted from: Henry & Halperin, Maine Law Affecting Maine Resources, Vol. II, 1970.

land contiguous to the water on fresh water streams carries ownership to the thread of the stream.

The common law of Maine is said to embrace the English rule of "natural flow" under which each riparian landowner has the right to have the water flow past his land substantially undiminished in quantity and unimpaired in quality. Strictly applied, the natural flow rule is almost completely unworkable for it would keep riparian owners from using any water for industrial, agricultural, or domestic purposes. The name of the doctrine is as non-utilitarian as its strict application. In practice a "reasonable use" rule has been applied which allows a range of beneficial water uses to be undertaken by riparians on riparian land.

Maine water law draws a basic distinction, between permitted riparian and impermissible non-riparian uses. Maine doctrine may be summarized as follows:

1. As between a riparian and a non-riparian use: The riparian use will win, whether upstream or downstream from the competing non-riparian use. This result seems to follow regardless of the relative utility of the two uses, and regardless of the reasonableness of the non-riparian uses.

2. As between two riparian uses: There will be a reasonable balancing of utilities and relative hardship for any non-domestic use; which balancing will take into account the size of the stream and a variety of other physical factors. Domestic uses upstream may exhaust the supply to the detriment of riparian downstream.

Most American states have a rule differing from Maine's in two major respects. First to maintain an action, a complainant must show that he will actually suffer damage if the defendant continues his use. Since non-injurious use does not give rise to a cause of action, such use cannot ripen into a prescriptive right. Second, the diversion of waters to non-riparian land is not illegal, provided that it meets the tests of reasonableness.

The language of "reasonable use," and the reasoning that is used to determine what is "reasonable," is used in Maine to balance competing uses as between riparian owners, both of whom are using the water in the service of riparian land.

The reasonableness of any particular use or the amount of water which may be diverted for consumptive use cannot by accurately ascertained in advance. It requires the qualitative balancing of two variables. That is, the use of one riparian proprietor is not unreasonable as to another riparian proprietor's use until the harm to one outweighs the utility to the other. The riparian

proprietor who values his watercourse for its aesthetic or recreational qualities alone will find it difficult, if not impossible, to convince a court that a riparian factory's use of the same waters, which inevitably gives rise to jobs and productive economic activity even though it may also substantially affect water quality or quanity, is unreasonable. An examination of the condition of many of Maine's non-tidal rivers and streams would suggest that courts have had the tendency to find reasonable that which is profitable.

Trust Doctrine*. The Maine court on occasion has considered the rights of non-riparians to use waters to be held by the State in trust for the public. The trust concept of public rights is a venerable one, received from the English common law with roots reaching to the Magna Charta.

Although in Maine the trust doctrine has been said to impose some duties on the State actively to protect the public rights to assure their availability for public use, it has not been considered a bar to disposal of the public rights, in whole or in part, by the State ligislature. Local government may not transfer public rights to private ownership unless the ligislature delegates it the power to do so. A restriction on the power of the legislature to transfer public rights to private ownership is that the transfer be for a public purpose. Thus the alienation may be looked upon as one type of regulation of public rights which in particular instances is deemed wise in view of the circumstances involved. The implication is that a decision to convey public rights to private owners would be reached only as part of an overall scheme of controls. Without such an overview it would be difficult to decide rationally that sale of particular public rights to particular persons would advance the interest of Maine's people as a whole. Limiting the power to transfer public rights to the central State government further suggests consideration must be given to the interest of all the State, or at least of more of it than the area within the jurisdication of one unit of local government, before transferring public rights to private ownership.

The trust doctrine as developed by the Maine court encourages the State to take positive action to regulate the exercise of public rights and to improve the physical environment for their exercise. Legislative discretion in developing a program of regulation and improvement is limited by the requirement that the program as a whole be for a public purpose. It is probably necessary to consider the circumstances existing in sizable regions of the State to satisfy the public purpose requirement.

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*Adapted from: Waite, G.G., Public Rights in Maine, Maine Law Review, Vol. 17, 1965.

Surface Water Rights*

The language of the Maine Supreme Judicial Court indicates that only persons who are citizens of the State at the time they seek to use Maine waters may excercise public rights in the watercourses of the State. Public rights exist only in some, e.g. navigable watercourses, these being tidal waters, lakes of at least 10 acres in surface area, and streams or lakes regardless of surface area large enough to be usable in transporting porperty. There is strong indication that the ability to float pleasure craft will make a Maine watercourse navigable and thus public today. The public on this reasoning may therefore use non-tidal streams and lakes smaller in surface area than 10 acres for traditional as well as recreational purposes. In the one case in which the Maine considered the matter, it said that a waterbody which would support canoeing was navigable, using language broad enough to include pleasure boats generally. The current popularity and economic significance of swimming, fishing, waterskiing and the like, as well as the practical difficulty of separating these activities from boating and other traditional uses of public waters suggests engaging in these sports also would be recognized as within the range of the public's use rights which may be exercised in navigable waters. Public rights to use great ponds-lakes at least 10 acres in surface area-are more firmly established by the Maine case law. Fishing, hunting ducks and other fowl, swimming and boating are traditionally recognized public uses of navigable waters including great ponds. Probably ice skating and other recreational uses would be upheld also. In tidal waters the public may fish, boat, and moor a boat to piling of a public highway bridge crossing such waters, or on exposed tidal flats. The public may walk along the tidal flats, take shell fish and dig for clams and bloodworms there. Probably the public may go ice skating, ice boating, or sleighing on the flats or remove sea manure from them. The public may not use the uplands to reach or leave the flats and perhaps cannot moor a set fish net to the flats.

The Maine court restricts the private persons who may obtain a judicial remedy for interference with public rights to persons who actually have attempted to exercise a particular public right. To a limited extent the Maine court has given remedies suggesting the public rights to be in the nature of property and has slighty retricted private uses of the upland which conflict with exercise of the public rights. These cases afford a foundation from which the court may be persuaded to enjoin

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*Adapted from: Waite, G.G., Public Rights in Maine, Maine Law Review, Vol. 17, 1965.

upland uses severely inimical to public uses of water in situations where the cost to the upland user of eliminating the interfering use is slight compared to the cost to the party seeking to exercise the public water use right.

Even though public rights in Maine waters are in some respects property rights, they are not absolute. The State legislature may dispose of all or part of them so long as the transfer is for a public purpose. Until such transfer is made the State must actively protect the public rights for use by members of the public. The result is to encourage action by the State to regulate the exercise of public rights and to improve physical conditions for their use. Such regulation and improvement, to be constitutional, must be executed pursuant to consideration of the interests of all the State, or large portions of it. Some such regulation and improvement, already is provided by the legislature and State administrative agencies, but without adequate regard for public water use rights. Matters now subjected to legislative or State administrative regulation include dam construction, water pollution, the equipment and operation of pleasure boats, ond fishing.

The means available to the public for reaching the waters on which public rights may be exercised are limited. Non-tidal streams and lakes with surface area less than 10 acres cannot be reached without permission of a riparian owner except from a public boat launching site, public highway or bridge, or other publicly owned land adjoining the watercourse. Great ponds may be reached not only from publicly owned shoreland, but also from privately owned, unenclosed land as well, certainly if the purpose for reaching the great pond is fishing or hunting birds, probably if the purpose is to exercise other public water use rights. Tidal waters may be reached by walking across or along tidal flats. Public access to public waters may be provided by State agencies, cities, or towns.

Decisions of the Maine Supreme Judicial Court have been favorable to state regulation of the use of natural resources, which suggests that well-planned State regulation of water uses also would be sustained. Probably the State can tax the exercise of public rights in water also.

Ground Water Rights

Ground water is not clearly defined by the Legislature or by the courts in Maine, and generally, the English or Common Law Rule applies.

A person has the right to drill wells and to use underground water, providing that the use is for legitimate purposes and not done maliciously. However, a person has no right to pollute underground water in such a manner as to damage the use of that water by others.

Eminint Domain*

Effective State action either to preserve areas from unwanted uses, or to make available for exploitation and support activities areas held in private ownership, may depend on the exercise of the power of eminent domain—the power of the State to take private property. Such a taking may be in "fee simple," absolute ownership, or it may take an "easement" from the owner, the right to a less than total interest in or use of the property.

The sovereign power of eminent domain may be exercised directly through legislative act or be delegated to a State agency or instrumentality after the Legislature has made the general determination that the public exigencies require that some property be taken for certain definite uses. If the power is delegated, the chosen agency or instrumentality makes the specific determination that the public exigencies require that a particular property be taken at a particular time for a particular legislatively authorized purpose.

"Public use" has been defined as something to which every member of the public has a right to actual use, and not just something from which the public may derive incidental benefit.

The following table states briefly the powers of eminint domain delegated to the various agencies within the State.

Table I

POWERS OF EMINENT DOMAIN

AGENCY	LIMITATIONS	APPROVAL NEEDED
State	Broad powers for navigation, ways, railroads, and land for military considerations.	Consent of Governor and Council necessary.
	Other.	Direct legislative authorization or by State agency to which power delegated.
Maine Port Authority	Limited to Ports of Portland and Bar Harbor.	

*Adapted from: Henry & Halperin, Maine Water Law Affecting Marine Resources, Vol. II, 1970.

Table I (cont'd)

AGENCY	LIMITATIONS	APPROVAL NEEDED
State Highway Commission	Broad power to take land and material for highway construction.	
Utilities		
Railroads	6 rods through woods, 4 rods other lands, unless more necessary for excavation, embankment or materials.	
Power Companies	Not within 300 feet of dwelling, developed or undeveloped water power, land of railroad.	
Ferries	Land as may be necessary.	Municipal officers, County commissioners, and Public Utilities Commission.
Parks and Recreation		
Parks	No more than 200 acres one park.	Governor and Council.
Boating Facilities	No power.	
Municipal Park Commission	Cannot take owner occupied residence. Land taken by eminent domain can not be used for purposes other than for which taken.	Municipal legislative body.
Maine Mining Bureau	No power.	Special authorization of the Legislature.
Dept. Inland Fisheries and Game	May take for game management, hatcheries, feeding stations.	

Table I (cont'd)

AGENCY	LIMITATIONS	APPROVAL NEEDED
	(May set apart for periods of 10 years any inland waterway for purposes of fish culture and scientific research.)	(Regulatory power. Not technically eminent domain as no compensation.)
Dept. of Sea and Shore Fisheries	(May take flats not exceeding 2 acres for periods not exceeding 10 years for scientific research.)	(Not even pretense of eminent domain since consent of riparian owner necessary.)

II-ADMINISTRATIVE STRUCTURE*

STATE OFFICES

State Planning Office

The State Planning Office was created January, 1968 at the Special Session of the 103rd Legislature. This Office is administered by a Director, who by statute must be experienced in planning or public administration with a master's degree in these or related fields. He is appointed by the Governor with consent of the Council for a term of five years.

This Office was established in the Executive Department, directly responsible to the Governor, to coordinate and develop the several planning responsibilities to State Government and serve as an advisory, consulatative, coordinating, administrative, and research agency.

One function of this office is the responsibility for the preparation of a comprehensive plan for the physical development of the State. This plan is to be known as the Maine Comprehensive Plan and is to be designed with the general purpose of guiding and carrying forward a coordinated and effective economic development of the State that will best promote the welfare and prosperity of the people. Statutory authorization for this "Comprehensive Plan" has been on the books for almost 15 years, but the requisite time and talent have not as yet been committed to the completion of this task.

In addition, the State Planning Office is assigned the duties of assisting the Governor and the Legislature in identifying long range goals and policies for the State; conducting continuing analysis of the economy and resources of the State of Maine; providing upon request, technical assistance to local and regional planning groups in the field of planning, public housing, and urban renewal; participating in interstate planning; accepting federal or foundation funds; and acting as coordinating agency among the several officers, authorities, boards, commissions, departments, and devisions of the State in matters relative to the physical development of the State.

The 104th Legislature empowered the State Planning Office to assist in forming regional planning commissions and the newly authorized councils of governments, again emphasizing the role of

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*Adapted from: Henry & Halperin, Maine Law Affecting Marine Resources, Vol. I, 1969.

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the State Planning Office as a coordinating agency.

Within the statute creating the State Planning Office the Legislature provided for certain funds to be used exclusively for water resources planning. To that end, a separate water resources planning section has been established within the State Planning Office. Among other assignments, the State Planning Office has been designated as the liaison agency to conduct programs in conjunction with the Water Resources Council and the New England River Basins Commission.

New England Interstate Planning Commission

The New England Interstate Planning Commission was established in 1967 to administer the New England Interstate Planning Compact. Its purpose is to provide improved facilities and procedures for the coordination of the policies, programs and activities of interstate significance in the New England region in the field of physical, social and economic resources, and to study, investigate and plan appropriate governmental activities with respect to the conservation, development and use of those resources.

Department of Economic Development

The Department of Economic Development (D.E.D.) is headed by a Commissioner of Economic Development appointed for a term of four years by the Governor with consent of the Executive Council. The Commission is organized into four divisions: Research, Planning and Program Assistance; a Division of Development, consisting of sub-divisions for Industrial Development, Vacation-Travel Development and Community Development; a Division of Promotion; and a Division of Science, Technology, and Mineral Resources.

As the State industry-attracting agency, the D.E.D. has been assigned the responsibility for the economic development of Maine. Two tenets have been emphasized by the department: (1) closing the income gap between Maine and the rest of New England, and (2) development through conservation. The latter can best be summarized as putting prospective industry on notice of the Enviromental Improvement Commission's (EIC) laws with regard to water and air pollution and an articulation of State policy in preserving Maine's environmental integrity. This policy takes cognizance of not only the dollar and cents value of Maine's liveability, but also the economic advantage of farsighted management of the State's natural resources.

Public Utilities Commission

The Public Utilities Commission (PUC) is composed of three members appointed for terms of seven years by the Governor with advice

and consent of Council. The Chairman is designated by the Governor.

The Public Utilities Commission has very limited jurisdiction over dams. Plans for dams in Maine must be filed with the PUC, but there is no indication that the Commission has any veto power over such a dam. The control the PUC exercises is in the form of reviewing and approving the financing for any proposed construction. There is no statutory provisions for the removal of dams other than the removal of ice dams.

Wetlands Control Board

The Wetlands Control Board is composed of the Commissioner of Sea and Shore Fisheries, the Commissioner of Inland Fisheries and Game, the Commissioner of the Environmental Improvement Commission, the Chairman of the State Highway Commission, and the Forestry Commissioner, or their delegates. A 1969 amendment added the Commissioner of Health and Welfare.

The Wetlands Control Board was established in 1967 to regulate the alteration of coastal marshes and wetlands. The statute provides:

> No person, agency, or municipality shall remove, fill, dredge, or drain sanitary sewage into, or otherwise alter any coastal wetland as defined herein, without filing written notice of his intention to do so, including such plans as may be necessary to describe the proposed activity, with the municipal officers in the municipality affected and with the Wetlands Control Board.

The 1969 amendment defined "coastal wetlands" as "...any swamp, marsh, bog, beach, flat or other contiguous lowland above extreme low water which is subject to tidal action or normal storm flowage at any time excepting periods of maximum storm activity."

Soil and Water Conservation Commission

The State Soil and Water Conservation Commission consists of eleven members. Its membership includes the Dean of the College of Agriculture, The Commissioner of Agriculture, the Forestry Commissioner, the Commissioner of Inland Fish and Game, and the Commissioner of Sea and Shore Fisheries who shall serve ex officio. In addition there are to be four Soil and Water Conservation District Supervisors representing four areas and two Soil Conservation Representatives to be appointed by the four District Supervisors. The elected officials serve for a term of four years. The Commission is authorized to employ an executive director.

The primary duty of this Commission is to classify soil within the State of Maine according to suitability for different types of

activity, e.g., forests, roads, campsites, industrial development, housing. This is part of its duty in carrying out the Legislature's policy to provide for soil and water conservation, prevention of soil erosion, flood control, prevention of impairment of dams and reservoirs, assistance in maintaining navigability of harbors and rivers, preserve wildlife, protect the tax base, and protect public lands. All Commission recommendations are advisory, however, and it is specifically forbidden to infringe upon or impair the rights of any owner of riparian land. Its recommendations are not enforceable if the land owner does not wish to comply.

Maine Land Use Regulation Commission

The Maine Land Use Regulation Commission, established by the 104th and significantly revised by the 105th Legislature, consists of seven members including the Director of Parks and Recreation, the Forest Commissioner, the State Planning Officer and four other members appointed by the Governor with the advice and consent of Council, for a term of four years. The four other members are to respectively represent the public, conservation interests, forest product industry interests and general land owner interests.

The stated purpose of the Legislature in enacting this bill was the desirability

> ..to extend the principles of sound planning, zoning and subdivision control to the unorganized and deorganized townships of the State in order to preserve public health, safety and general welfare, and to prevent the further spread of inappropriate residential, recreational, commercial and industrial uses detrimental to the proper use or value of these areas; to prevent the development in these areas of sub-standard structures or structures located unduly proximate to waters or roads; and, to prevent the despoilation, pollution and inappropriate use of the water in these areas; and to preserve ecological and natural values.
>
> In addition, the Legislature declares it to be in the public interest....to encourage the well managed multiple use of the privately owned forest land and timber resources and to encourage opening of these lands to the residents of Maine and visitors, in pursuit of outdoor recreational activities.....

The Land Use Regulation Commission was given broad powers by the 105th Legislature to carry out their mission. However, time has been too short to put these powers into effect.

Division of Sanitary Engineering, Department of Health and Welfare

Through the Division of Sanitary Engineering, the Department of

Health and Welfare is responsible for enforcing the State Plumbing Code. Towns may have their own ordinances, but minimum standards must comply with the State Code. A license must be obtained for the installation of plumbing from an official who is responsible to the State rather than an employee of local government. The fee for the license is divided between the State and local government. If the local government has its own inspector, he reports both to the State and the municipality, and that portion of the State fee which would have gone to the inspector goes directly to the municipality.

Enviromental Improvement Commission

The Environmental Improvement Commission consists of ten members appointed by the Governor with advice and consent of Council, two of whom represent manufacturing interests of the State, two of whom represent municipalities, two of whom represent conservation interests in the State, two of whom represent the public's interest, and two other members knowledgeable in matters relating to air pollution. The members serve for a term of three years.

It is the duty of the Environmental Improvement Commission to recommend to the Legislature standards for the quality of water in the inland streams and territorial water of Maine. The Commissioner is to enforce the standards so set and to consult and advise persons, corporations, or municipalities who pollute Maine's waterways.

> It shall be the duty of the Commission to study, investigate and from time to time recommend to the persons responsible for the conditions, ways and means, so far as practicable and consistent with the public interest, of controlling the pollution of the air, rivers, waters and coastal flats of the State by the deposit therein of thereon of municipal sewage, industrial waste and other substances and other substances and materials insofar as the same are detrimental to the public health or the animal, fish or aquatic life, or to the practicable and beneficial use of said air, rivers, waters and coastal flats. The Commission shall make recommedations to each subsequent Legislature with respect to the classification of the rivers, waters and coastal flats and sections thereof within the State, based upon reasonable standards of quality and use.
>
> The Commission shall make recommendations to each Legislature with respect to abatement of pollution of the air, rivers, waters and coastal flats and sections thereof within the State for the purpose of raising the classifications or standards thereof to the highest possible classification or standards

so far as economically feasible, such recommendations to relate to methods, costs and the setting of time limits for compliance.

New England Interstate Water Pollution Control Commission

The New England Interstate Water Pollution Control Commission was established by virtue of the New England Interstate Water Pollution Control Compact, which was drawn up under the consent given by Congress for two or more states to enter into compacts for cooperative effort and mutual assistance for the prevention and control of water pollution. The Compact became effective upon adoption by two contiguous New England States. The membership consists of five commissioners from each signatory state.

The five members for Maine are the Commissioner of the Department of Health and Welfare, the Chairman of the Maine Environmental Improvement Commission, and three more commissioners, one representing municipal interests, one representing industrial interests, and one representing the general public, who are appointed by the Governor with advice and consent of Council to serve for a period of three years.

Board of Pesticides Control

The Board of Pesticides Control was established in 1965 to regulate, in the public interest, the application of pesticides. The Board is composed of the Commissioner of Agriculture, the Commissioner of Health and Welfare, the Forest Commissioner, the Commissioner of Inland Fisheries and Game, the Commissioner of Sea and Shore Fisheries, the Chairman of the Public Utilities Commission, Chairman of the Highway Commission, and the Chairman of the Environmental Improvement Commission.

A licensing procedure is set up for the use of pesticides. Certain restrictions are placed on their use and provision is made in the statute for financial responsibility of those seeking licenses. Appropriate penalties have been provided for those who are guilty of license violations.

Department of Inland Fisheries and Game

The Department of Inland Fish and Game is headed by a Commissioner appointed by the Governor with the advice and consent of Council for a term of three years. The Departments operational divisions include the Engineering Division, the Fisheries Research and Management Division, the Hatchery Division, the Game Research and Management Division, and the Information and Education Division. The Warden service is divided into ten subdivisions which do not coincide with county lines.

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The Department is responsible for the management of inland fish and game, and preservation of Maine's wildlife and fish in the inland streams. The Department shares responsibility with the Department of Sea and Shore Fisheries for anadromous fish.

The Commissioner of Inland Fish and Game has the sole responsibility for the construction and repair of fishways on dams. If the Commissioner so directs, a fishway must be constructed on a dam. A petition for a fishway may be originated by a petition of two hundred citizens from a municipality or municipalities in which such dam or artificial construction exist, by a majority of County Commissioners, or by the Inland Fish and Game Legislative Committee. The statute providing that the Commissioner may require the owner or occupant to provide a suitable fishway is permissive and not mandatory, and citizens have no de jure claim to installations of fishways that the Commissioner has denied.

While the Commissioner of Inland Fish and Game has no responsibility to authorize the building of a dam or even to veto such construction, there is a statutory requirement that he as well as the Chairman of the Public Utilities Commission be notified.

The Commissioner, in carrying out his responsibility for game and wild birds, may acquire land by gift, bequest, or otherwise for the location, construction, maintenance, and convenient operation of game management areas, fish hatcheries, and feeding stations. His authority enables him to take by eminent domain that which he cannot obtain by other methods.

The Commissioner of Inland Fisheries and Game and the Commissioner of Sea and Shore Fisheries are joint heads of the Bureau of Water Craft Registration and Safety.

Atlantic Sea Run Salmon Commission

The Atlantic Sea Run Salmon Commission is composed of the Commissioner of Inland Fisheries and Game, ex officio the Commissioner of Sea and Shore Fisheries, ex officio; and a third member appointed by the Governor and Council for a term of four years. The third member's only listed qualification is that he must be a citizen of Maine.

It is the duty of this Commission to make regulations for the taking of Atlantic salmon. The authority of the Commission to make regulations is limited to setting (1) the time when taken, (2) the method by which taken, (3) the number taken, (4) the weight taken, and (5) the length taken. The Commission is specifically forbidden to infringe upon the jurisdiction of the EIC.

The Salmon Commission is authorized to purchase or lease, within

this State, land, dams, and other structures, to acquire flowage rights, mill privileges, and rights-of-way, and to build dams and other structures, for the purpose of conservation of the Atlantic sea run salmon, provided prior rights of towns are not affected thereby.

Department of Sea and Shore Fisheries

The Department of Sea and Shore Fisheries is headed by a Commissioner appointed by the Governor, with advice and consent of Council, for a term of four years. The Department has a common heritage with the Department of Inland Fish and Game in Legislation of 1867 which set up a Commission to take steps relative to the restoration of "sea fish" to the rivers and inland waters of Maine.

In 1895 the duties which had previously been handled by one body were separated. Jurisdiction over inland fish and game was vested in three Commissioners; the jurisdiction over Sea and Shore Fisheries was transferred to a separate Commissioner.

The purposes of this Department are: conserving marine life, scientific research, promoting and developing the Maine coastal fishing industry, and implementing, administering, and enforcing State laws relating to sea and shore fisheries.

The present Department of Sea and Shore Fisheries is composed of the three main divisions, the Marine Research Division, the Coastal Warden Division, and the Public Relations and Marketing Division. Historically the Department has been primarily an enforcement agency. Despite 19th centry interest in research, it has only been within the last two decades that research of any magnitude has been carried on within the Department.

GOVERNMENTAL REORGANIZATION

The skeletal structure of the State agencies described above was substantially altered by the Maine Legislature in June 1971, from that shown as Figure 1 to that shown as Figure II. This merging of 88 separate units into 10 consolidated departments and 3 special administrative agencies will make more effective and efficient the efforts of the State to properly regulate the utilization of its water and related natural resources.

Of particular interest here are the reorganized Departments of Enviromental Protection and Natural Resources shown in Figures III and IV respectively. However, as of this writing, this reorganization, although approved by the governor and Legislature, has not yet occurred physically. A special session of the 105th

Legislature has been called to work out the precise details of and actual implementation steps of this reorganization.

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FIGURE S-1(ME) - State of Maine: Organization of State Government

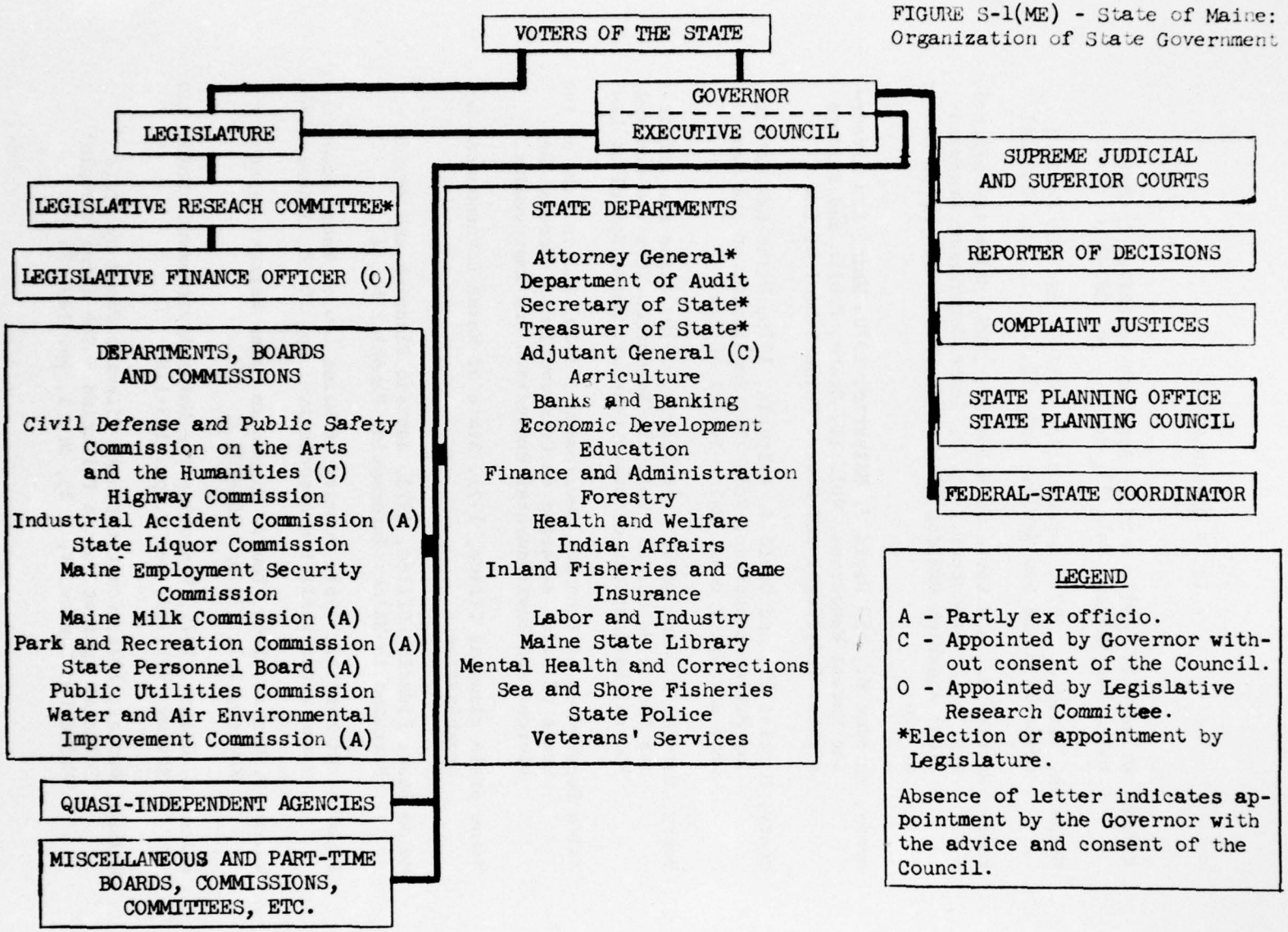


FIGURE S-2(ME) - State of Maine:
Governmental Reorganization
Departments Approved by 105th Legislature

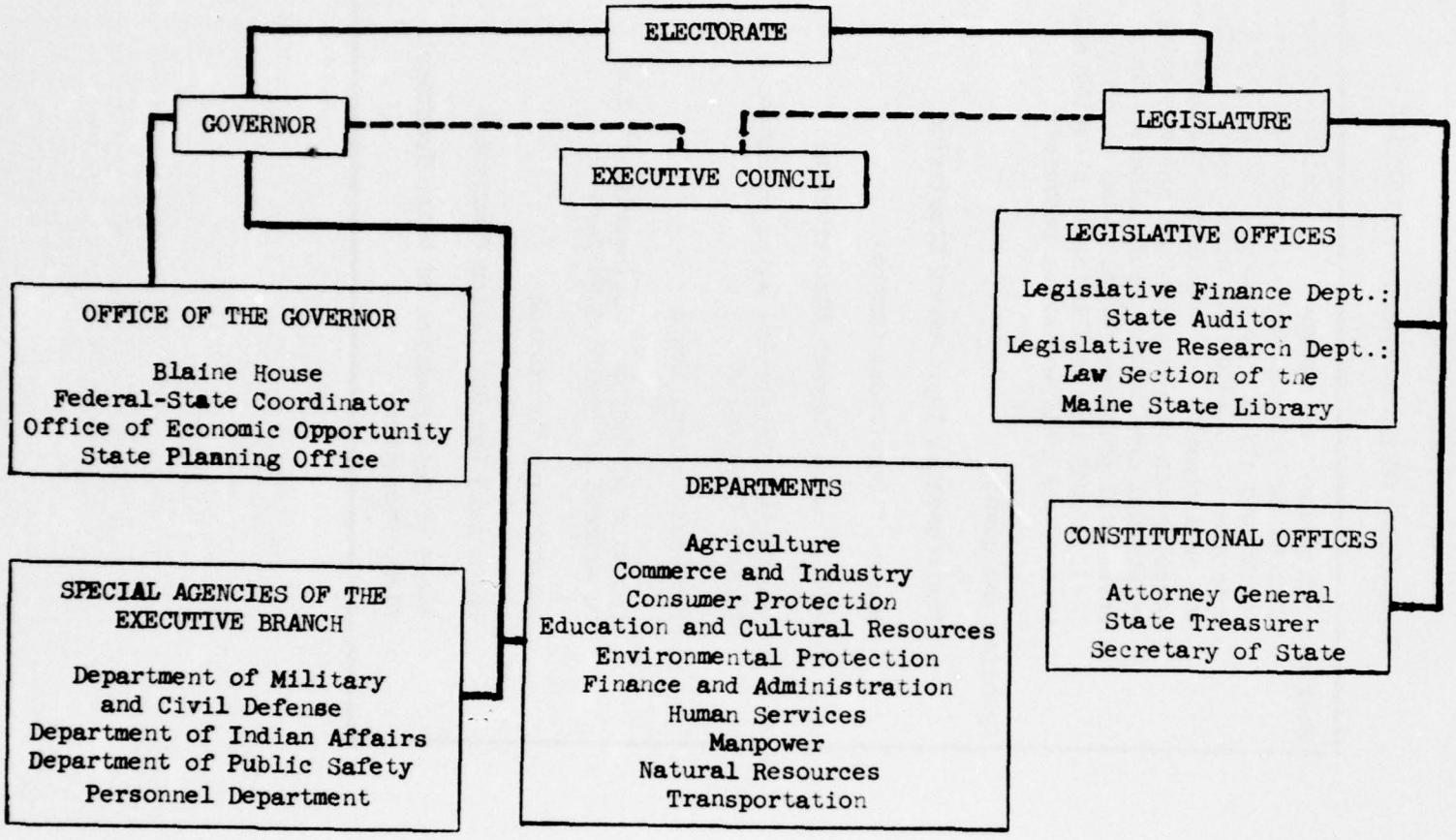


FIGURE S-3 (ME)

STATE OF MAINE

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mission: To protect and improve the quality of our natural environment and the resources which constitute it, and to improve the public's opportunity to enjoy and exist healthily in the environment, by controlling the man-made despoilation of our resources and directing growth and development along planned lines which will preserve for all time an ecologically sound and aesthetically pleasing balance of naturally-occuring resources.

Agencies Included:

Environmental Improvement Commission

Board of Pesticides Control

Pest Control Compact Administrator

New England Interstate Water Pollution Control Commission

Wetlands Control Board

Division of Sanitary Engineering of the Department of Health & Welfare

Maine Mining Commission

Maine Land Use Regulation Commission

Board of Certification of Water Treatment Plant Operators

FIGURE S-4 (ME)

STATE OF MAINE

DEPARTMENT OF NATURAL RESOURCES

Mission: To provide for the more effective management of Maine's natural surroundings and physical resources, and to achieve an optimum balance among the economic utilization of these resources for commercial uses, their utilization for recreational purposes, and the conservation of these resources for their own sake. This would be accomplished through the administrative consolidation and coordination of all State programs concerned with the management of Maine's forests, park facilities, water bodies, fish, wildlife, and mineral and ocean resources.

Agencies Included:

Department of Inland Fisheries and Game

Maine Forest Authority

Parks and Recreation Commission

Department of Sea and Shore Fisheries

Maine Mining Bureau

Forestry Department

STATE OF NEW HAMPSHIRE

Prepared by

State of New Hampshire

June 1970

STATE OF NEW HAMPSHIRE
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I - RECOMMENDATIONS OF THE STATE OF NEW HAMPSHIRE

The State of New Hampshire recommends:

Implementation by the State of a flood plain protection program to delineate and regulate the flood hazard areas to achieve intelligent land utilization compatible with the hazard of flooding. This preventative concept, designed to control man's uses of the flood plains, must be implemented and funded by the General Court.

Adoption by the General Court of legislation which recognizes the need for protecting areas of unique scenic and environmental quality.

The appropriation, at all levels of government, of money to implement fully the pollution abatement program designed to attain water quality standards set by the State's classification program.

The requirement that erosion control standards be adopted and enforced by the State to avoid adverse and often irrevocable impacts caused by public and private construction projects.

Advanced acquisition of land at impoundments endorsed by the State, and support of Section 209 of P.L. 90-483 of August 1968 which provides the Federal government with the authority to condemn land for this purpose at the request of and with reimbursement by the State. These measures are designed to eliminate hardship, allowing sufficient time and monetary consideration for relocation of residential and commercial uses.

The establishment of a quality monitoring network, in the Connecticut River Basin, capable of incorporation into a basin-wide control center such as the Reservoir Center at the New England Division, Corps of Engineers, at Waltham, Massachusetts.

Impiementation of the Coordinating Committee's Stream Regulation Subcommittee recommendations with regard to minimum flows at main stem dams.

Implementation of all fish hatchery construction necessary to support resident and anadromous fishery programs.

Support of a National Recreation Area Study based upon a definitive master plan mutually participated in by the National Park Service and the State of New Hampshire. It is further recommended that sufficient Federal funds be provided to enable the State to employ qualified and full-time staff to effect proper coordination with the basin communities and with the Federal agencies involved.

Coordination of efforts of the State resource and related agencies with those of Federal and local agencies, private organizations, and individuals by the New Hampshire Council of Resources and Development to assure the most beneficial effects from programs within the North Atlantic Region.

Study and appropriate action to assure that adequate and quality water supplies will be available for domestic and industrial uses. It is further recommended that the State's Water Supply Study, Phases I and II, be used as a guide for such study and subsequent action.

II - STATE LAW

STATE CONSTITUTION

While the State of New Hampshire Constitution does not specifically mention water resources, it does provide in a broad manner for the enactment of laws in this field in Article 5, Part Second, as follows:

"And further, full power and authority are hereby given and granted to the said general court, from time to time, to make, ordain, and establish, all manner of wholesome and reasonable orders, laws, statutes, ordinances, directions, and instructions, either with penalties, or without, so as the same be not repugnant or contrary to this constitution, as they may judge for the benefit and welfare of this State, and for the governing and ordering thereof, and of the subjects of the same. . . ."

STATUTES

A study is now underway by Attorney Alexander Kalinski and Dr. Robert Forste, former Resource Economist at the University of New Hampshire, entitled, "A Compendium of Water Law and Economics in New Hampshire;" it is being made for the New Hampshire Water Resources Research Center, University of New Hampshire. The reader is referred to this upcoming study for discussion of New Hampshire's water laws.

The reader is also referred to the following publication containing references to New Hampshire's water laws: "Water Law: Streamflow Rights in New England and New York State,": prepared by James H. Kendall for the New England Interstate Water Pollution Control Commission, November, 1967.

The concern of the State of New Hampshire for its water resources on a State level was set forth in the 1935 legislation establishing the Water Resources Board, as follows:

Revised Statutes Annotated, Laws of 1955, Chapter 481 -

"481:1 Declaration of Need. It is declared that there is a State-wide need for the conservation and distribution of water and the regulation of the flow of rivers and streams and that the public interest, welfare, and necessity require the construction of projects for the conservation, development, storage, distribution, and utilization of water, and the corporation authorized hereunder shall be regarded as performing a governmental function in carrying out the provisions hereof. It is further declared that there is a special public need for dams and reservoirs at

strategic locations for regulating the flow of rivers and streams to lessen damages resulting from floods and to promote the State's industrial and economic welfare, by enhancing the present and potential water power along the rivers and streams and the construction, maintenance, and operation of such dams and reservoirs within the State is a primary purpose of this chapter."

Further interest in the waters of the State, in relation to the quality of the public waters, was shown by the State Legislature's 1947 establishment of the New Hampshire Water Pollution Commission (RSA Chapter 149). One of the duties of this Commission is "to study and investigate all problems connected with the pollution of the surface waters of the State." The coverage under "surface waters" is all encompassing - meaning streams, lakes, ponds, and tidal waters within the jurisdiction of the State, including all streams, lakes, or ponds bordering on the State, marshes, water courses and other bodies of water, natural or artificial.

The Legislature took a broad state view toward its water resources in relation to the entire natural resources picture through the creation of the New Hampshire Council of Resources and Development, (Chapter 212, Laws of 1965). The Council of Resources and Development, in carrying out its duties of "consulting upon common problems in the field of natural resources and their development," has studied many proposals and projects relating to the State's water resources.

Water resources are also an important concern to the Office of Planning and Development, Division of Economic Development, in carrying out one of its statutory duties: "to prepare and keep up to date a plan for the orderly development of the resources of the State."

In the past several years public agencies and private organizations have been increasingly concerned with further methods of protecting and regulating the use of the State's waters. The 1967 State Legislature passed a number of laws aimed toward the protection of New Hampshire's water on a State level. Some of the bills passed in 1967 are:

Chapter 147. Aimed at preventing the pollution of the State's inland waters and streams through regulation of septic tank construction within 1,000 feet of any surface water in the State. The New Hampshire Water Supply and Pollution Control Commission has the regulatory powers in this law.

Chapter 311. Classified all New Hampshire surface waters to insure that through proper regulation future generations will have clean waters to enjoy.

Chapters 215, 254, 274, and 307. Four laws on dredging and filling projects in the State's inland surface waters and their shores, conserve, or equalize the flow of such stream or streams for the benefit of any such mill or mills, upon obtaining authority so to do as hereinafter provided." The Water Resources Board requires that the person file a petition with it for such a project and that a public hearing on the project be held. (Chapter 482:19-22)

Channel Encroachment. Chapter 254, Laws of 1967, requires that a proposal for any fill operation in surface waters of the State, to include streams, be submitted to the Water Supply and Pollution Control Commission for approval. While this regulation is directed to control possible water pollution from proposed projects, it does ensure that the State be informed of projects that encroach on a stream channel.

Another regulation relating to encroachment of stream channels is R.S.A. Chapter 262-A (mentioned below) which regulates depositing of wastes and junk in streams and watercourses. This, too, is under the jurisdiction of the Water Supply and Pollution Control Commission.

Developments in Flood Plain. There are no statutes specifically regulating development on flood plains. The Community Zoning Enabling Act, Chapter 31:60-89, R.S.A. 1955, empowers the legislative body of any city or town to regulate and restrict development of flood plains if it so desires through the zoning powers over ". . .the location and use of buildings, structures and land for trade, industry, residence or other purposes." In New Hampshire only the City of Keene has flood plain zoning provisions in effect.

Dredging and filling in public waters. Two laws were passed by the 1967 Session of the Legislature on projects to excavate, dredge, and fill in public waters.[1] Under Chapter 274, Laws of 1967, any person, firm or corporation proposing to "excavate,

1. Note: The 1969 State Legislature passed a revised version of these two laws that provides for a new committee to review dredge and fill project petitions and make recommendations to the Governor and Council (Chapter 387, Laws of 1969). The new committee is made up of representatives from the State resources agencies - a change from the earlier law whereby the New Hampshire Water Resources Board was the sole judging agency on inland water projects. This is an interim measure that expires July 1, 1971. The Legislature also established a Commission to study inland waters (Chapter 342, Laws of 1969) which will study existing laws relating to inland wetlands, marshes, and flood plains and will make recommendations for revised or new legislation in this field.

remove, or dredge any bank, flat, marsh, swamp, or lake bed that lies below the natural mean high water level of any public waters" of New Hampshire must petition to the Governor and Executive Council for permission. The petition is referred to the Water Resources Board for investigation and recommendation to the Governor and Council for action. For purposes of the law, public waters are defined as all natural ponds of more than ten acres. The law provides for a public hearing on each proposed project.

Chapter 307 has provisions similar to Chapter 274 except that it applies to any project involving placing "any fill below the mean high water level of any public waters nor below the artificially created high water level of public owned water bodies in this state with the intent or with the effect of creating or forming filled land thereby adjacent to such water bodies . . ."

In addition to the above two chapters, Chapter 254, Laws of 1967 requires that any person proposing "to dredge, excavate, place fill, mine or undertake construction in the surface waters of the State shall be directly responsible for the submission of plans concerning such proposal" to the Water Supply and Pollution Control Commission for approval.

Discharge of Wastes. Chapter 147:9, Laws of 1967, states, "111. It shall be unlawful for any person or persons to discharge or dispose of any sewage or waste to a surface water of the State without first obtaining a written permit from the commission. In granting such permits, the Commission (Water Supply and Pollution Control Commission) shall prescribe such degree of treatment as it deems reasonable and proper . . ."

Chapter 262-A states, "If any person shall put or place or cause to be put or placed, in or upon any . . . public bathing place or the approaches thereto, or into or on the ice over any public waters, streams, or watercourse . . . any bottles, glass, crockery, cans, scrap metal, junk, paper, garbage, old automobile or parts thereof or refuse of any nature whatsoever or any noxious thing, he shall be fined not less than twenty-five nor more than one hundred dollars."

Sewage discharges from boats operated upon waters of the State either directly or indirectly in or near any waters of the State are prohibited, as per Chapter 146:1, Laws of 1967. Regulations are established for marine toilets on boats in Chapter 149.

Construction of Public Water Supply. Chapter 148, Section 25. "1. WATER SUPPLY SYSTEMS. No person, proposing to supply water for domestic uses, shall construct any new system, or enlarge any existing system, for supplying water to the public without first submitting detailed plans of the proposed construction to the Water

Supply and Pollution Control Commission and securing its approval thereof . . ." The law defines "public water supply" as any water system supplying water for ten or more consumers, each family, tenement, store or other establishment being considered a single consumer.

Water Quality.

1) Waste Treatment. Chapter 148, Section 11. "SEWAGE DISPOSAL SYSTEMS, CONSTRUCTION. Any person proposing to install new public sewerage or sewage treatment facilities, or to extend, renovate, replace or substantially repair any such existing facilities, shall submit, at least thirty days in advance of construction, detailed plans and specifications therefor to the Water Supply and Pollution Control Commission and secure its approval thereof. The foregoing provisions shall also be applicable to any institution, accommodating thirty or more people, which provides its own facilities as to sewage disposal."

In the 1967 Session of the Legislature, a bill was passed that requires permits for septic tank systems for individual homes or groups of homes near shorelines. The purpose of the bill, Chapter 149-E, is "to protect water supplies and to prevent pollution in the surface waters of the State as defined in R.S.A. 149 by inadequate sewer or waste disposal systems near shorelines." "Near shorelines" as defined by the bill is "any land bordering on the surface waters of the State and/or within one thousand feet of the water line at maximum water line elevation or the watershed ridge line whichever is nearer the maximum water line elevation." Any person proposing to subdivide land near any shoreline or to construct a sewage or waste disposal system neary any shoreline must submit copies of plans and specifications for any such system for approval in accordance with the requirements of the Water Supply and Pollution Control Commission as provided for in Chapter 149-E.

2) Registration of Engineers. Chapter 147:8, XIV, Laws of 1967, authorizes the Water Supply and Pollution Control Commission "to establish rules and regulations governing the prequalification of consulting engineers employed in the planning and construction of public water supply and pollution projects." The Commission requires that the consultant, who prepares plans and specifications for water pollution control works submitted to them for approval, be a registered professional engineer qualified to practice sanitary engineering.

WATER RIGHTS

The riparian doctrine is followed in the State of New Hampshire. "In essence this common law - the riparian doctrine - postulates

that the right to use water is a property right attached to and inherent in the land, with exclusive ownership of that right resting in the landowner." The riparian doctrine prevails in the thirty-one states of the eastern half of the United States except in Minnesota and Mississippi. (31)

"In a few jurisdictions, the idea that riparian rights are governed solely by a determination of the reasonableness of the use rather than by a distinction between riparian and non-riparian land has been recognized. New Hampshire has pioneered in this attempt to expand water uses." (31)

In a discussion on navigable waters, prepared for the State Planning Project in March, 1964, by James A. Manning, an attorney-at-law, Manchester, New Hampshire, it is stated that, ". . . the public right to the use of the stream or river or water is limited only by the needs of the public. It is not limited to navigation, to fishery, to water storage. The limit is public need and the capacity of the public water to satisfy the need. The test to be applied is what justice and reason require."

"The State has the power to legislate for all public purposes and to control the public water for such purposes." Manning stated in his report that early in New Hampshire history it was determined that the owners of the land abutting rivers and streams which are not arms of the sea own the soil underneath the water. The court, however, has stated that the water is public if capable of public use. While the State could not control the use of the bed of the stream or river, such use would have to be reasonable and not interfere with the public right.

CASES

For a discussion of pertinent law cases regarding the water resources of New Hampshire, refer to the Kalinski - Forste study on water law, prepared for the New Hampshire Water Resources Research Center, University of New Hampshire, entitled "A Compendium of Water Law and Economics in New Hampshire."

III - STATE GOVERNMENT
ACTIVITIES AND ADMINISTRATIVE STRUCTURE

ADMINISTRATIVE STRUCTURE

This section contains a brief description of the State agencies, boards, and commissions and related organizations in the natural resources field in New Hampshire.

Having jurisdiction over these agencies are the New Hampshire General Court and the Governor and Executive Council.

The New Hampshire General Court, consisting of a Senate and House of Representatives, was provided for in the New Hampshire Constitution adopted in June 1784. The General Court meets biennially, in odd-numbered years. The Senate has 24 members and the House of Representatives about 400.

The State Constitution (Part Second, Article 41) vested the executive power of the State in the Governor. It states that the Governor shall be responsible for the faithful execution of the laws. An Executive Council of five members advises the Governor (Constitution, Part Second, Article 60). They meet frequently with the Governor to consider many projects requiring his approval.

INTERSTATE

Atlantic States Marine Fisheries Compact. The purpose of the Compact, whose members are the costal states from Maine to Florida, is "to promote the better utilization of the fisheries, marine, shell and anadromous, of the Atlantic seaboard by the development of a joint program for the promotion and protection of such fisheries, and by the prevention of the physical waste of the fisheries from any cause." One of the powers of the Compact Commission is that it shall "have power to recommend to the states....the stocking of the waters of such states with fish and fish eggs."

Legal basis: R.S.A., Chapter 213, Laws of 1955.

New England Regional Commission. This body functions as a cooperative Federal and State partnership primarily concerned with economic and social development of the six-state New England Region. Established under the provisions of Title V of the Public Works and Economic Development Act of 1965 (79 Stat. 552; 42 U.S.C. Sec 312), the Commission is composed of the New England Governors and a Federal Cochairman appointed by the President. The statute empowers the Commission to undertake regional and technical assistance, including planning and demonstration projects, directed toward improving the conservation and utilization of human

and natural resources. The Federal Cochairman, upon recommendation of the Commission, may furnish supplementary funds to pursue programs that are otherwise qualified for assistance under the provisions of various Federal grant acts where, because of local economic conditions, the full local matching share requirement can not be met. Among the Federal grant acts that may be supplemented by the Commission are the Federal Water Pollution Control Act, Watershed and Protection and Flood Prevention Act, and the Land and Water Conservation Fund Act of 1965.

Connecticut River Valley Flood Control Compact. This concord between New Hampshire, Vermont, Massachusetts, and Connecticut establishes interstate cooperation for adequate storage and impoundment of the waters of the Connecticut River and its tributaries for the protection of life and property from floods. The compact provides a common agency through which the signatory states may more effectively cooperate in accomplishing the object of flood control and water resources utilization in the basin of the Connecticut River and its tributaries.

This Compact provides a method whereby the downstream States of Connecticut and Massachusetts reimburse the upstream States of New Hampshire and Vermont on an annual basis a certain percentage of the amount of taxes lost to the upstream states' political subdivisions for those lands acquired by the United States government for flood control dams and reservoirs.

Legal basis: R.S.A. Chapter 487, New Hampshire Laws of 1955.

Merrimack River Valley Flood Control Compact. This agency, established in 1956 by a compact between the states of Massachusetts and New Hampshire, is similar in its powers and activities to the Connecticut River Valley Commission described immediately above.

New England Interstate Water Pollution Compact. New Hampshire participates in regional planning for water pollution control through its membership in the New England Interstate Water Pollution Control Commission, initiated by the New England Interstate Water Pollution Control Compact approved by an act of Congress in 1947, and ratified by all seven state legislatures by 1955. This Commission aims toward a sound and equitable solution to pollution control problems through a coordinated interstate program. Because all the major river basins in New Hampshire - the Connecticut, Merrimack, Androscoggin, and Saco - are interstate drainage basins, this program is of importance to the State.

The main function of this Commission is the approval of classifications for the interstate, inland, and tidal waters of the seven-state Compact area (the six New England States plus New York State). This classification system, much the same as New Hampshire's system,

permits a balanced use of the area's waters to meet the various degrees of water quality required. Each of the seven states agreed to prepare classifications of its interstate waters according to present and proposed highest use, and to submit them to the Commission for approval.

A second part of the Commission's work has been a program of surveys, investigations, and research in connection with pollution abatement programs.

Legal basis: R.S.A. Chapter 488, Laws of 1955.

New England River Basins Commission. This body was established under the authority of the Water Resources Planning Act by President Johnson on September 6, 1967, at the request of the New England Governors' Conference.

In accordance with Title II of the Water Resources Planning Act this Commission shall:

(1) serve as the principal agency for the coordination of Federal, state, interstate, local and non-governmental plans for the development of water and related land resources in its river basin;

(2) prepare and keep up-to-date a comprehensive plan for public and private development of water and related resources;

(3) recommend long-range schedules for data collection, investigation, planning and construction of projects; and

(4) foster and undertake such studies of water and related land resources problems in its river basins as are necessary for preparation of the comprehensive plan.

New Hampshire Commission on Interstate Cooperation. The New Hampshire Commission on Interstate Cooperation has the following functions:

1. To carry forward the participation of New Hampshire as a member of the Council of State Governments.

2. To assist in establishing governmental machinery to facilitate cooperation between New Hampshire and other states, both regionally and nationally.

3. To endeavor to advance cooperation between New Hampshire and other units of government by means of adoption of compacts, enactment of reciprocal statutes, adoption of uniform administrative rules, and other methods of cooperation of government offices and officials.

Legal basis: R.S.A. Chapter 19, New Hampshire Laws of 1955.

STATE

New Hampshire Department of Agriculture. The New Hampshire Department of Agriculture has the following functions:

1. Promote agriculture and the agricultural interests of New Hampshire.

2. Cooperate with extension work at the University of New Hampshire.

3. Gather, tabulate, and maintain a file of information pertaining to agriculture within the State.

4. Collect and publish information on the agricultural resources of the State and disseminate this data throughout the nation.

5. Investigate the control of insects and ragweed, and cooperate with towns and regions to eliminate trouble areas.

6. Advocate supplemental irrigation to increase agricultural production.

Legal basis: R.S.A. Chapter 426, Laws of 1955.

Department of Fish and Game. The Department of Fish and Game is involved in the following activities: fish and game propagation and maintenance, surveys, technical assistance to other agencies and to individuals, protection of wildlife, habitat development, rescue and search parties, preservation of marshes, dam construction, stream and pond stocking, and the eradication of rough fish species.

This Department constructs, operates, and maintains small water impoundments for the improvement of fish and game; cooperates with Federal and State agencies for water project planning and pollution abatement; reviews applications for water barriers, reclaims ponds and lakes; maintains water areas for the protection of water fowl; stocks waterways with fish; maintains migratory bird refuges; carries on studies of algae and other water growths; makes periodic surveys of most of the State's lakes and ponds, showing depth and bottom conditions; and operates pheasant farms, fish hatcheries, and game refuges.

The Department also investigates needs for public access to water; advises on stream channel control to reduce sediment; cooperates with schools in teaching the children basic conservation

and the safe use of firearms; makes available services of game biologists to owners and managers of forest properties; develops methods of opening up more private land to sportsmen; provides wildlife lecturers, films, educational assistance.

Legal basis: R.S.A. Chapter 206, Laws of 1955.

Department of Public Works and Highways. This Department is responsible for planning, design, acquisition of land, and construction of the entire State highway system.

The Department is aware of the necessity to develop roads of high visual quality and has won national design awards. Thus, the driver on New Hampshire roads has an opportunity to view many of the scenic qualities of the New Hampshire landscape. Recognition of the need for roadside rest areas has stimulated the development of well designed rest areas, replacing some outmoded ones.

The Department, through the Public Works Division, serves as the construction agency for the Division of Parks, supplying construction crews and supervising the work of independent contractors for major developments within the parks. It also maintains the park roads.

A significant milestone in the evolution of public recreation and of the increasing importance of recreation is the Federal directive issued several years ago by the Bureau of Public Roads, U.S. Department of Commerce, which calls for a review of plans for Federal Aid Highway construction by representatives of the U.S. Forest Service, Wildlife Service, and the Fish and Game Department, as well as the Department of Public Works and Highway, in order to achieve a maximum coordination of public highway improvements with the requirements of fish and wildlife resources.

This Department has undertaken, in cooperation with the other State agencies, a study of a scenic road system for New Hampshire, in accordance with a request from the Bureau of Public Roads.

Legal basis: For organization of Department - R.S.A. Chapters 228 and 229, Laws of 1955.

Department of Resources and Economic Development. The Department of Resources and Economic Development was established in 1961 by the Legislature with the purpose of improving "the administration of State government by providing unified direction of policies, programs and personnel in the field of resources and economic development making possible increased efficiency and economies from integrated administration and operation of these related functions of the State government."

The Department, under the executive direction of a commissioner

appointed by the Governor for a term of four years, consists of the Division of Resources Development; the Division of Economic Development, which includes the sub-divisions of research and planning, industrial development, and promotion; and the Division of Parks. The Water Resources Board and State Port Authority are a part of the Department of Resources and Economic Development for housekeeping administrative purposes only.

A commission made up of seven members, appointed by the Governor, is to "consult with and advise the Commissioner of Resources and Development with respect to the policy, programs and operations of the Department upon a continuing basis."

Legal basis: Chapter 223, Laws of 1961.

The Division of Resources Development (Forestry Division) manages the State Forest lands by a multiple-use plan. Elements of this management plan include timber production, wildlife management, watershed protection, insect and disease control, fire control, and forest demonstration areas.

The Forestry Division cooperates closely with the Division of Parks in State parks where land is divided into recreational and timber production zones.

This Division is responsible for the overall prevention and control of forest and brush fires throughout the State except within the boundaries of the White Mountain National Forest. The Division, upon request, can cooperate with counties, towns, corporations, and individuals in preparing plans for the protection and management of trees, woodlots, and timber tracts. The Division also carries on a forest pest and disease research and control program.

Legal basis: R.S.A. Chapters 216 through 226, Laws of 1955; and Chapter 223, Laws of 1963.

The Division of Parks is responsible by statute for the design, development, administration, operation and maintenance of the recreational facilities in the following public areas of recreational significance within the State of New Hampshire.

1. The Division of Parks will preserve and develop unusual scenic, scientific, historical, and recreational areas and facilities within the State;

2. The Division will develop these areas and facilities for public recreational, educational, scientific, and related uses;

3. The Division will expand the facilities within the present system of State parks, historic sites, wayside areas and scientific areas to achieve maximum increase in value of these facilities

as tourist attractions, in relation to the growing needs for such facilities;

4. The Division will give equal consideration to the recreational needs of all sections of the State;

5. The Division will develop the present parks and facilities thereon to their optimum capacity for skiing, camping, and other income-producing activities;

6. The Division will develop any other lands and facilities that the State now owns for optimum recreational potential; and

7. The Division will acquire new areas and facilities believed to have sound potential for development, use, and operation as State parks, historic sites, or wayside areas.

The Division of Parks cooperates with the Department of Fish and Game in the management of State park lands which have fish or wildlife production potential.

The Division of Parks also cooperates with the Water Resources Board, the Division of Resources Development (Forestry Division), and the Department of Public Works and Highways in the maintenance of dams, in forest management practices, and in the development of park facilities, respectively.

Legal basis: R.S.A. Chapters 216 and 218, Laws of 1955; and Chapter 223, Laws of 1963.

The Office of Planning and Research of the Division of Economic Development is the central planning agency of the State and is responsible for the collection, compilation, and analysis of data bearing upon industrial, commercial, social, and physical factors which influence the present and future welfare of the State, its economic well-being, and the conservation of its natural resources.

The Office of Planning and Research conducts special studies, administers Federal planning grants on the State, regional, and local levels, coordinates the planning functions of the Federal, State, and local agencies concerned with resources development, and gives assistance to public, quasi-public, and private agencies and individuals involved in resource planning and research.

Legal basis: R.S.A. Chapter 12, Laws of 1955; and Chapter 223, Laws of 1963.

The Office of State Geologist was established in 1967 by the State Legislature to have the following duties:

1. To collect and distribute geologic mineralogic information;

2. To coordinate cooperative projects with U.S. Geological Survey and other agencies;

3. To research the geology and mineral resources of the state;

4. To serve as editor of state geologic publications;

5. To make studies related to geology of the State;

6. To cooperate with Federal agencies in collecting data on geologic activity and mineral industries; and

7. To assist in educational programs in geology and mineral resources at State educational institutions and public schools.

Legal basis: Chapter 96, Laws of 1967.

Department of Safety. This Department's Division of Safety Services administers the boating and navigational aids program on the fresh waters of the State. In summer, the agency has approximately 75 full and part-time boat inspectors, who act as waterborne police. The Division of Safety Services is also responsible for placing more than 2,000 markers, buoys, and other navigational aids on more than 100 water bodies. Lake Winnipesaukee alone is patrolled by seven State-owned craft, some of which are on duty 24 hours a day.

Legal basis: Chapter 166, Laws of 1961; and R.S.A. Chapters 270, 271, and 272, Laws of 1955.

New Hampshire Council of Resources and Development. This Council was formed to coordinate the activities of State agencies concerned with the State's natural resources.

"The Council shall consult upon common problems in the field of natural resources and their development; consult with, negotiate with and obtain information from any Federal or State agency that may or could be involved or concerned with any of its problems, reports, recommendations or studies; make such reports and recommendations as may be desirable in its opinion to the Governor and Council; and, subject to the approval of the board, commission or commissioner of the agency or department affected, make such studies and recommendations upon its own initiative, or upon request, to the general court concerning such changes as it may deem advisable to coordinate effectively the work of the agencies which have membership in the Council. Its decisions shall be advisory only."

The Council is composed of the head of each of the followinng State agencies: Department of Agriculture, Department of Education, Fish and Game Commission, Department of Public Works and Highways, Water Pollution Commission, Water Resources Board, Department of Resources and Economic Development, Division of Economic Development, Division of Resources, and Division of State Parks. The Director of the Office of Planning and Research serves as the permanent chairman.

Legal basis: Chapter 212, Laws of 1965.

Public Utilities Commission. This body has the power and duty "to keep informed as to all public utilities in the State, their capitalization, franchises and the manner in which the lines and property controlled or operated by them are managed and operated, not only with respect to the safety, adequacy and accommodation offered by their service, but also with respect to their compliance with all provisions of law, orders of the Commission and charter requirements." (R.S.A. Chapter 374:4). The utilities covered by the Commission include those for electricity, gas, steam, telephone, telegraph, water, municipal utilities, railroads, express, street railways, toll roads and toll bridges, motor vehicles (carriers of passengers and common and contract carriers of property), and carriers by water.

Legal basis: R.S.A. Chapters 362 through 382, Laws of 1955.

State Conservation Committee. The State Conservation Committee was established to serve as an agency of the State. It has nine members - four State agency heads and five others appointed by the Governor. The Committee serves without compensation and has the following duties:

1. To offer assistance to the supervisors of the Soil Conservation Districts of the State in formulating and carrying out any of their programs;

2. To keep the supervisors of each district informed of the activities of all other districts, and to facilitate an interchange of advice, experience, and cooperation among such districts;

3. To coordinate the programs of the several districts so far as they may be done by advice and consultation;

4. To seek the cooperation, and technical and financial assistance of the United States, of this State, and of town and county governments, in the work of such districts;

5. To keep the public informed throughout the State, concerning the activities and programs of the districts; and

6. To establish satisfactory cooperative arrangements and to avoid duplication between the districts and other Federal, State, or county agencies which have similar responsibilities.

Legal basis: Chapter 366, Laws of 1967.

Water Resources Board. The New Hampshire Water Resources Board is concerned primarily with conservation of State water resources and the regulation of stream flows.

A major responsibility of the Water Resources Board is flood control and protecting riverbank property from water damage. To carry out this responsibility, the Board cooperates with the U.S. Army, Corps of Engineers, and the Soil Conservation Service in their respective flood control programs. The Board is required to approve all water resource projects contemplated for New Hampshire and to provide technical advice in both the planning and construction stages of such projects.

The Water Resources Board supervises and, in some cases, assumes ownership of all dams and dam sites in New Hampshire. Those dams which have become State property are maintained and improved by the Water Resources Board. The Board is authorized to investigate facilities for hydroelectric power on the State's streams.

With the objective of regulating the flow of streams, the Board constructs and operates conservation reservoirs, which may be released when stream flow downstream reaches a certain minimum flow. Control of stream flow is important for diluting sewage and other wastes, and for fish and wildlife uses.

The provision of recreation facilities at Water Resources Board installations is only incidental to its primary goals; however, the Board allows the public to gain access to the water at most of its dam sites.

The Water Resources Board is responsible for investigating and considering requests for permits to dredge and/or fill in the public waters of the State under Chapters 307 and 274, Laws of 1967.

Legal basis: R.S.A. Chapters 481 and 482, Laws of 1955.

Water Supply and Pollution Control Commission. Pollution Control activities of this Commission include the authority to control industrial, municipal, and private sources of water pollution in the State of New Hampshire. This Commission, acting under New Hampshire Water Pollution Control laws and through the courts, may exercise this authority by enforcement of established legislative

classifications of surface waters and of recently passed legislation controlling sewage disposal systems near shorelines.

New Hampshire has had a comprehensive program on water pollution control since 1947, when the Legislature first established the Water Pollution Commission and its program. In the 1967 Session of the Legislature the Commission's duties were expanded and its title changed to "New Hampshire Water Supply and Pollution Control Commission."

The powers and duties of this Commission may be summarized as follows:

1) To study and investigate all problems connected with the pollution of the surface waters of the State;

2) To conduct scientific investigations and research on the elimination of various types of pollution;

3) To cooperate with other public or private agencies in the conduct of such investigations and research;

4) To perform all necessary work relative to classification of State surface waters;

5) To require filing of plans and specifications for wastewater treatment plants;

6) To investigate and consider all requests for permission to subdivide land near any shoreline, or to construct sewage or waste disposal systems on any land bordering on the surface waters of the state and/or within one thousand feet of the water line at maximum water line elevation;

7) To investigate and approve applications for State and Federal aid for the construction of municipal pollution abatement projects;

8) To work with other states to eliminate pollution of interstate waters; and

9) To employ personnel and purchase necessary equipment.

Legal basis: Chapter 147, Laws of 1967.

Water supply activities of the Water Supply and Pollution Control Commission are performed by its Sanitary Engineering Division, which is responsible for the protection of sources of water and ice.

The following are the Sanitary Engineering Division's main activities:

1) "The Commission is empowered to investigate the sanitary conditions and methods pertaining to the source, treatment, and distribution of all public water supplies[1] for the domestic use, and to require the application of any treatment or improvement in conditions and methods as it may deem necessary to insure fitness and safety and adequate protection of the public health." (R.S.A. 148:22).

Any person constructing a new public water supply system or enlarging any existing system must submit plans for the proposed construction to the Water Supply and Pollution Control Commission.

2) The Division regulates the cutting of ice used as a source of a public water supply for domestic purposes for man.

3) The Water Supply and Pollution Control Commission is authorized to study the probable domestic water supply requirements of groups of towns and/or cities which appear likely to have increased industrial and population growths for the next fifty years. The Commission shall find out the most feasible and economic sites for sources of water supply for such long-range planning. (R.S.A. 148-A)

Legal basis: R.S.A. Chapter 148.

University of New Hampshire. The State Agricultural Experiment Stations conduct research and gather information relating to land use, farm characteristics, population, and zoning, as well as a wide range of physical and biological data useful for planning and developing recreation enterprises. The stations, in cooperation with the National Agricultural Experiment Station, are now carrying out or are planning a number of studies bearing directly on the use of human, land, and water resources for recreation. These include surveys of recreation facilities and services on farms and potentials for further development, demands of urban residents for outdoor recreation, and sports (swimming, skiing, and so on) and indoor recreational activities (bowling, crafts, arts, and the like).

The Cooperative Extension Service is the branch of the University of New Hampshire and the U.S. Department of Agriculture which conducts informal, off-campus education for both adults and youth. The Service's education work is mainly in agriculture, forestry, home economics, and community planning, giving advice to both farm and non-farm residents on agricultural and forest production,

1. A public water supply system, by law, is any such system that accommodates thirty or more people, including not only municipality systems but also institutions, subdivisions, etc.

management, and marketing problems through the County Agricultural Agents and the County Foresters. The County Home Economist provides assistance for families on a wide variety of family concerns. Other fields in which the Cooperative Extension Service provides educational assistance include developing income-producing recreation facilities, 4-H youth work for boys and girls, and the development of natural, human and man-made resources through the county Rural Areas Development Committees.

An Extension Coordinator gives advice to Town Conservation Commissions in their local conservation projects.

The Resources Development Center is an apparatus that has been established at the University of New Hampshire so that talents existing there can be brought to bear on State problems. It is a problem-solving agency that deals with natural, human, economic, and cultural resources. The Center has had the leading role in directing a comprehensive study of resources available in the Seacoast Region of New Hampshire. It has also conducted a Mount Washington users study in conjunction with the Governor's Mount Washington Study Committee. The Center assumes assignments in service responsibilities, in administrative planning, in the discovery of new techniques for commerce, industry, and business, and in practical ways of promoting progress in New Hampshire and the New England area. The Center cooperates closely with existing State agencies and authorities.

Water Resources Research Center

In July, 1964, the Governor of the State of New Hampshire designated the University of New Hampshire as the educational institution at which a Water Resources Research Center would be located in New Hampshire. The Center was authorized by the Water Resources Research Act of 1964, Public Law 88-379, July 17, 1964, as amended by Public Law 89-404, April 19, 1966, which authorized State Water Resources Research Centers in each of the fifty states and Puerto Rico.

The Center was established to plan and coordinate water resource research and graduate training in water resource research in the colleges and departments of the University. It also provides the mechanism for cooperation in water resources research with other research institutes and agencies throughout the State. In May, 1967, ten research projects were underway through funds provided under Public Law 88-379.

POLITICAL SUBDIVISIONS

Soil and Water Conservation Districts. The Soil and Water Conservation Districts, one for each of ten New Hampshire counties,

are organized under the provisions of Chapter 366 of the Laws of 1967. The governing body of each of the districts consists of five supervisors (who shall be land occupiers in the district) appointed by the State Conservation Committee. The supervisors receive no compensation for their services except expenses.

These districts do not have any funds to do the jobs listed below, but serve in an advisory capacity and work with Federal agencies who plan and carry out the projects.

The districts have the following powers:

1. To conduct research relating to soil erosion, floodwater, sediment damages, land drainage, and the conservation and development of natural resources;

2. To conduct demonstration projects within the district on publicly or privately owned lands in order to demonstrate conservation and development methods;

3. To carry out preventative and improvement measures for the conservation and development of the soil, water, and related natural resources within the district;

4. To cooperate or enter into agreements with any agency or occupier of lands within the district in carrying out erosion control, flood prevention, drainage, watershed protection, and resource conservation and development projects or other works of improvements for the natural resources within the district;

5. To acquire, maintain, and sell property, real or personal, in carrying out the provisions of the law establishing the districts;

6. To make available to land occupiers within the district agricultural machinery, fertilizer, seeds, and other material as will assist such land occupiers in conservation projects upon their lands;

7. To construct and maintain structures as may be necessary under the law establishing the district;

8. To develop comprehensive plans for changes in land use, control and prevention of soil erosion, land drainage, and prevention of flood-water and sediment damages within the district; and

9. To take over by purchase, lease, or otherwise and administer any works of improvement for the conservation and development of soil, water, and related natural resources.

IV - POLICIES OF THE STATE

TRENDS

The broad policy of the State is that the State of New Hampshire does have a responsibility for the management of its water resources for the public interest, health, and welfare. The policy of the State of New Hampshire toward its water and related land resources is in a process of evolution and change in response to today's needs and demands. Actions of the State Legislature in the past 36 years have shown concern for protection of the public's interest in our water resources in regard to regulation of excess stream flows, through formation of the Water Resources Board; water pollution prevention and control and protection of public water supplies through creation of the Water Supply and Pollution Control Commission and passage of laws on water pollution; and other aspects such as recreational use of surface waters.

Private organizations such as the New Hampshire Better Water Committee, New Hampshire Audubon Society, and Society for the Protection of New Hampshire Forests are becoming increasingly outspoken on the need for the State to provide responsible management for its waters and related land resources. The Federal government is requiring that the states accept responsibility in this field and the State Legislature and State agencies are coming to realize that the State must take an active role in managing its water resources if these are to be protected for future generations.

Private industries are placing increasing demands on New Hampshire's waters. The growing population in the State means more people need more water. In future years greater pressures will be put on our existing surface and ground water supplies. In turn there will be more pressure on State government to provide responsible management.

The State's water resources policy today is significantly changed from that of thirty-six years ago and earlier when the State had few controls over water resources. State government agencies have only relatively recently been established in the field - the Water Resources Board in 1935 and the Water Supply and Pollution Control Commission in 1947.

For further discussion refer to New Hampshire Water, Governmental Responsibilities and Activities in Relation to the Water Resources of New Hampshire, published by the New Hampshire State Planning and Development Commission, Concord, New Hampshire, December 1953. Sixteen years ago, the New Hampshire Council of Resources and Development "singled out the need for a definite State policy on water resources as the most important current

problem in the development of the State's resources." The Council of Resources and Development has been working since that time to aid in the development of State policy in this field.

Another report to which the reader is referred is State Planning Project Report No. 10, The Water Resources of New Hampshire, 1965, for additional material on the State's water policies.

RESPONSIBILITIES FOR WATER PROGRAMS

The governmental responsibilities for management of the State's water and related land resources are divided between Federal, State and local governments in a complex pattern of agencies and commissions, with often overlapping duties, activities, and jurisdictions.

The Federal government has agencies working in the State on various projects, and Federal water programs encourage development of state and local water and related land projects. To date there has been excellent cooperation between the Federal government agencies and state and local agencies.

The State of New Hampshire, through its agencies, takes a leading role in the management of its water resources in the State. The two major water resources agencies, the Water Resources Board and the Water Supply and Pollution Control Commission, conduct ongoing programs, provide technical assistance and guidance to local governments for water resources projects, and set standards and guidelines that local organizations must follow.

The following statement, exerpted from New Hampshire Water Supply and Pollution Commission booklet entitled, "Why Control Water Pollution?" published in 1958, sums up the overall approach of the Commission.

"It is clearly recognized that to restore the quality of our water resources to their original condition today would mean to close up our industries, cities and villages and return land and water use back to a pre-industrial, purely agricultural economy. Although going back to nature may be attractive to many of us, very few are willing to relinquish a standard of living which is the direct result of our industrial growth. We have on the one hand the actuality of abuse of our water resources and on the other hand an alternative of practically no use at all. It is apparent that the first condition is wantonly wasteful and the second alternative is ridiculously impractical if we are to continue to enjoy the highly desirable standard of living made possible by the industrial output. A realistic and practical attitude at this time is one which strives to control the pollution of a stream to within the limits of quality prescribed by a carefully considered and duly

adopted classification. Therefore, a happy medium must be worked out between the unattainable extreme of original purity for every waterway and the unforgivable extreme of gross pollution. It is conceivable that when we, as a people, apply the same energy and ingenuity to the waste disposal problem that has been and is now being applied to the many other complex problems of our day, heavy industry and large populations could make complete use of our water resources without degrading them. This happy state, of course, is the ideal situation."

The responsibilities of local municipalities on water resources matters include provision of local water supplies, and sewage treatment plants where necessary. Local health officers aid in finding and working toward correction of local pollution problems. Municipalities also have the power to zone flood plains and other areas within their bounds for certain designated uses.

COOPERATION AND COORDINATION

The State of New Hampshire has a policy of close cooperation with the Federal government in management of its water and related land resources. The Water Resources Board maintains close contact with the U.S. Army, Corps of Engineers, U.S. Soil Conservation Service, and U.S. Geological Survey, Hydrologic Branch. The Water Supply and Pollution Control Commission coordinates with the Department of Health, Education, and Welfare including such agencies as the Environmental Protection Agency. Other State agencies maintain similar contacts on water resources matters. The Council of Resources and Development and the Office of Planning and Research attempt overall coordination among Federal and State efforts on water and related land resources matters in the best interests of the people of the State.

Further coordination is provided through the Office of the Governor, to whom the water resources agencies of the Federal government submit request for State approval for projects, and State cooperation in studies. The Governor, in turn, obtains the cooperation of the concerned State agencies for the projects.

The State also maintains contact with private industry and commercial enterprises which are involved in plans and projects for the State's waters and related lands.

Close coordination is especially necessary in projects on our streams such as private company hydroelectric installations and major industries which use streams as coolants, to carry off wastes, or to generate power.

Coordination of the State of New Hampshire water resource agencies' efforts with those in adjoining States is achieved both

on an individual agency level and also through membership in several New England-wide organizations. These organizations include the New England Governors' Conference, the New England Regional Commission, the New England River Basins Commission, and interstate compact organizations that are cited in the section on administrative structure.

FINANCING OF WATER PROJECTS

The State of New Hampshire has given added impetus to the construction of pollution control facilities in municipalities by offering to pay forty percent of the total treatment construction costs. However, the maximum amount of Federal funds allocated to the State has not been forthcoming, and therefore State appropriations have not been fully utilized. The net effect of State and Federal financial assistance permits the individual community to bear only 30 percent of the total treatment costs. (Laws of 1965, Chapter 14 and Chapter 217)

The State has authorized the Water Resources Board to cooperate with cities and towns in the development of public recreation facilities at small watershed project sites under U.S. Public Law 566, by providing financial assistance in such recreation projects. (Law of 1967, Chapter 439)

Under the laws of the State, the Water Resources Board provides the lands, easements, and rights-of-way necessary for projects in the State under P.L. 566.

The Water Resources Board is authorized by New Hampshire Revised Statutes Annotated Chapter 481:15 to provide "for the issuance of bonds for the purpose of paying the cost or portion thereof of any one or more" water resources projects provided for under Chapter 481. These projects include reservoirs, dams, diversion and distribution canals, water-works systems, and other related projects. The Lake Francis impoundment, Pittsburg, New Hampshire, was constructed by the State by means of this financing method.

RELATED LAND RESOURCES

In contrast to the surface waters of the State where the State of New Hampshire follows a policy of comprehensive management and control, i.e. inforcing quality standards for all surface waters and groundwater, management practices and regulations on use of the land are left to private individuals, to local municipalities, and to State and Federal agencies on lands in their ownership.

The State, through its natural resources agencies provides technical information and advice on land use to local governmental organizations and to private citizens. These agencies and their functions are cited in the section above, "State Government Activities and Administrative Structure."

V - PROJECTIONS

It is anticipated that State of New Hampshire natural resources agencies will continue to be active in the water resources field in the coming years in response to increased pressures from an expanding population and economy. The State will continue to work closely with Federal and local governmental agencies, as well as with private interests, to achieve the aim of wise use of its waters and related land resources in the public interest.

The following resources agencies will be most involved in the development of the State's water and related land resources in the near future.

DEPARTMENT OF FISH AND GAME

The largest single expenditure on this department's list relates to the State's trout and salmon stocking programs. Other expenditures include coordination programs with the Corps of Engineers, Soil Conservation Service, Highway Department, etc., pond reclamation, pond construction and dam maintenance, pond access, warm water fish management, anadromous fish restoration, deer yard management, and projects to keep abreast of habitat changes resulting from projects of government agencies and private interests.

Future plans should take the Fish and Game Department's ownerships and projects into consideration. If trends continue as in the past, it may be expected that Fish and Game expenditures for the projects within the State will increase at the rate of approximately four percent per year.

DIVISION OF PARKS

The Division of Parks, in cooperation with the Office of Planning and Research, as part of the New Hampshire Outdoor Recreation Plan, prepared a comprehensive priority program for the fiscal years of 1970 through 1975. This program reflects three major resource management objectives: the acquisition of lands important for public outdoor recreation opportunities; optimum development and effective maintenance of recreational facilities and services for public use; and protection and preservation of those resources which have statewide significance as areas of scenic, scientific, historic, and other value.

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WATER RESOURCES BOARD

An extensive list of proposed projects for dams, water rights, and lands and land easements is submitted for approval to each session of the General Court. As the list is continually changing, an up-to-date listing should be obtained from the Water Resources Board directly.

WATER SUPPLY AND POLLUTION CONTROL COMMISSION

This Commission recognizes a need for the expansion of its activities statewide, to meet the growing demands and increasing responsibilities. In order to effect the necessary expansion, the Commission will require increased salary levels (to make recruitment of professional personnel possible), expansion of the professional staff, additional programs of technical assistance to local communities, additional supervision of municipal treatment plant operations, and increased stream monitoring activities. The Commission views as desirable the establishment of regional offices for professional field staff, creation of a specific public works function with the agency, and development of land absorption systems to protect water quality.

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STATE OF VERMONT

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STATE OF VERMONT
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STATE OF VERMONT

I - STATE LAW

SYNOPSIS

Water rights in Vermont are based on the common law doctrine of riparian rights, as modified or augmented by specific legislative enactments.

Although certain statutes appear to tend toward the more recent appropriative doctrine, the fundamental concept of riparian doctrine has been changed but little.

Changes in character of water usage, and differing demands upon existing water supply, have led to the enactment of statutes to meet specific needs and purposes. Additional legislative action can be expected in the future, with the arising of newer demands and usages which are not adequately provided for, or may be incompatible with the existing riparian rights doctrine.

State Constitution. There is little mention of water in the Constitution of the State of Vermont. The only specific mention is contained in Chapter II, Section 63, in which the inhabitants of this State are given *the liberty to fish* in all boatable and other waters (not private property) under regulations as might be made by the General Assembly.

However, Chapter I, Article 2nd provides that private property is subject to public use, provided adequate compensation is made to the private owners; and further, Chapter I, Article 5th provides for the police power of the State, which has been interpreted by a multitude of court decisions as being founded on the duty to conserve public health, safety and morals, and as such, has been construed to apply to the beneficial public enjoyment of the State's water resources.

Statutes. The water policy of Vermont is set forth in Title 10, Vermont Statutes Annotated, Section 571, as follows:

"It is hereby declared to be the policy of the State that the water resources of the State shall be protected, regulated and, where necessary, controlled under authority of the State in the public interest and to promote the general welfare; and it is further declared that said policy necessitates the creation of a State agency which shall be known as the Department of Water Resources, in which there shall be the Vermont Water Resources Board, ..."

Further, legislation enacted in 1970 by the General Assembly provides:

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"Lakes and ponds which are public waters of Vermont and the lands lying thereunder are a public trust, and it is hereby declared to be the policy of the State that these waters and lands shall be managed in the public interest and to promote the general welfare, and it is further declared that the management of these lands shall be exercised by the Vermont Water Resources Board. For the purposes of this chapter, jurisdiction of the board shall be construed as extending to all waters and lands lying beneath the mean water level of such lakes and ponds, as such mean water level is determined by the Board." - 1969, No. 281 (Adj. Sess.), §1, eff. July 1, 1970.

and also:

"To aid in the fulfillment of the State's role as trustee of its navigable waters and to promote public health, safety, convenience and general welfare, it is declared to be in the public interest to make studies, establish policies, make plans, make rules, and authorize municipal shoreland zoning bylaws for the efficient use, conservation, development and protection of the State's water resources. The purposes of the rules shall be to further the maintenance of safe and healthful conditions, prevent and control water pollution; protect spawning grounds, fish and aquatic life; control building sites, placement of structures and land uses, preserve shore cover and natural beauty, and provide for multiple use of the waters in a manner to provide for the best interests of the citizens of the State." - 1969, No. 281 (Adj. Sess.) §13, eff. July 1, 1970.

Case Law. The Vermont Supreme Court, although accepting the principles of English common law, rejected the more appropriative precedents in vogue in England at the time when in Martin v. Bigelow, Aikens II, 184 (1827), the doctrine of riparian rights was accepted governing water flowing in definite channels on the surface of the ground, predating the English acceptance by six years.

Case law has subsequently modified previously established rules of usage as newer or previously undefined uses have developed or statutory enactments have modified specific concepts.

In Chatfield v. Wilson, 28 Vt. 49 (1855), the Court distinguished between surface and percolating waters and held that the latter were not subject to correlative rights as were the former. The Court declared that rights to percolating water were to be regarded as a part of the land itself.

Cases discussed here are mentioned to demonstrate the willingness of the Vermont Supreme Court to rule on new concepts of water rights and usages and will be discussed more fully later in this study.

WATER RIGHTS

Doctrine. The state in which water is found determines the applicable water rights. Rights to flowing surface water are subject to the reasonable use rules of riparian usage.

Ground water, or water percolating under the surface of the ground, is not subject to the riparian doctrine, but such rights attach to the ownership of the land instead.

Surface water. Surface water flowing in a stream or definite channel is not subject to ownership itself. The riparian owner, however, has a right to the enjoyment of this flowing water as it passes along or through his property.

This is the riparian rights doctrine and it has been adopted by the Vermont Supreme Court as the law applicable to flowing streams.

The case of Martin v. Bigelow, Aikens II (1827), rejected prior appropriation as a basis for acquisition of water rights and adopted from Weston v. Alden, 8 Mass. 136, and others, the riparian rights doctrine.

Under the riparian rights doctrine, there has developed two theories which regulate the rights of a riparian owner in relation to other riparian owners on the same stream or body of water. These developments are the "natural flow" and the "reasonable use" theories.

The distinction between these theories is slight, however, in accepting the rule that each case should be decided on its merits, the "reasonable use" theory has been laid down by the Vermont Supreme Court in its numerous decisions on such matters.

Equality of right between riparian owners is the essence of the doctrine, each owner having an equal right to make a reasonable use of the waters of the stream, subject to the equal right of other owners likewise to make a reasonable use. What is a reasonable use is a matter for the trier.

The Court, in Kasuba v. Graves, 109 Vt. 191, 194 A. 455 (1937) thoroughly discussed the implications of reasonable use, although this case involved the discharge of excess waters rather than the more usual problems encountered during normal or low flow periods. See also Lawrie v. Silsby, 76 Vt. 240, 56 A. 1106 (1904) and Fraser v. Nerney, 89 Vt. 257, 95 A. 501 (1915).

Diffused surface water, not flowing in a definite channel, does not fall within the riparian doctrine. In Fire District No. 1 v. Graniteville Spring Water Co., 103 Vt. 89, 152 A. 42 (1930), the

Court ruled that there are no correlative rights in percolating waters, that percolating water belongs to the owner of the land, and that riparian rights did not attach to percolating waters until after they had become part of a flowing stream.

Ground Water. In Chatfield v. Wilson, 28 Vt. 49 (1855), the Court adopted from Greenleaf v. Francis, 18 Pick. 117, its rules relating to the use of water in the earth. Such water is to be regarded as part of the land itself, to be enjoyed absolutely by the proprietor within whose territory it is. The riparian doctrine governing use of water in streams is inapplicable, there being no correlative rights existing between the proprietors of adjoining lands.

This original opinion has been reaffirmed in numerous cases, notably Chatfield v. Wilson, 31 Vt. 358 (1858), and Fire District No. 1 v. Graniteville Spring Water Co., 103 Vt. 89, 152 A. 42 (1930).

Access to Lakes and Streams. The right of access to lakes and streams varies depending whether the person asserting the right is a riparian owner or a member of the general public. If the party involved is a member of the general public, then his rights are more of an implied than described nature.

The general rule is that a riparian owner has the right, by virtue of his ownership, of access from his land to any navigable or public water of the State. Jurisdiction over boatable waters, and other waters not private property, is expressly reserved to the State (Section 63 of Chapter II, Vermont Constitution; New England Trout and Salmon Club v. Mather, 68 Vt. 338, 35 A. 323 (1895); State v. Malmquist, 114 Vt. 96 (1944), and others). Municipalities may restrict public or private access to waters which are utilized for potable water supply. (State v. Quattropani, (1925) 99 Vt. 360, 133 A. 352, 72 A.L.R. 677).

The general public is entitled to the free and undisturbed use of all boatable or public waters (Section 63, Chapter II, Vermont Constitution), subject to such regulations as the General Assembly may prescribe. This right of access to boatable or public waters would not include, however, the right of access to such waters over adjacent lands which are privately owned. Access by the public is generally limited to public fishing access areas or other public premises.

In view of the right of the public to the use of a boatable (navigable) stream, the test of determining whether a stream is boatable becomes an important factor. Public waters are waters which are boatable in fact. Boatable waters, within the meaning of the Constitution, are waters that are of "common passage," as

highways. The capability of use by the public for the purposes of transportation and commerce affords the true criterion of the navigability of a river, pond or lake, rather than the extent or manner of that use. If they are capable in their natural state of being used for purposes of commerce, no matter in what mode the commerce may be carried on, they are navigable in fact, and therefore, become in our law public waters or highways, they must be navigable to some purpose useful to trade or agriculture. (New England Trout and Salmon Club v. Mather, supra).

Diversion or Impoundment of Streams. The right of a riparian owner to construct a dam to impound water for use for reasonable purposes has, from an early date (1827 - Martin v. Bigelow, supra), been upheld by the Court.

However, concern for the public safety and public good led to legislative enactment; 10 V.S.A., Chapter 29; requiring prior approval of an appropriate State agency.

Further legislative enactment, 10 V.S.A., Chapter 28, Subchapter 1, provides for steps to secure regulated discharge from water storage reservoirs in existence at the time of passage of the statutes.

Diversion of water for usage on riparian lands must meet the reasonable use principles of the riparian doctrine. Streams may be diverted to protect highways from damage.

Eminent Domain. The right of eminent domain will be discussed more thoroughly as each board, agency or department is listed along with its functions.

For the purposes of this section on state law, it is sufficient to state that the right of eminent domain in relation to water resources development and related facilities resides in the State agencies so impowered and in the several municipalities of the State. These groups may exercise this right when it becomes necessary in order to fulfill their functions.

At the state level, the power of eminent domain resides with the Water Resources Board for flood control purposes.

REGULATORY AUTHORITY

Permits or Approvals Required.

(1) For Drilling or Abandoning Wells. No permit is required of the owner of land to drill or abandon a well located on land belonging to him.

Persons (including firms, corporation, etc.) engaging in the practice of water well drilling must obtain a license to practice from the Water Resources Board (10 V.S.A., Chapter 35), and must file reports on each well, with data on yield, materials encountered, and other information, with the Department of Water Resources.

(2) For impoundments. Before any impoundment which would impound 500,000 cubic feet or more of water can be constructed, prior approval must be obtained from the State agency having jurisdiction. The Public Service Board has jurisdiction over those dams involved in the generation of hydro-electric energy for public use or as a part of a public utility system. All other dams are under the purview of the Water Resources Board.

Before granting approval for the construction of an impoundment, the State agency involved must hold a public hearing on the matter and must determine the effect of the proposed impoundment upon various aspects relating to the public good, and upon the public safety. (Title 10, V.S.A., Chapter 29). Legislation enacted in 1970 (Title 10, V.S.A., Section 707a) directs the Department of Water Resources to prepare a classification plan defining whether any future dam constructed for private usage would be likely or unlikely to be in the public interest.

If the proposed impoundment involves a natural lake or pond which is a public water of the State, the Water Resources Board must also establish rules and regulations relating to the surface water level to be maintained. (Title 10, V.S.A., Section 575 (a) (11).)

Approval of the construction of an impoundment could also permit or deny diversion of water or manipulation of stream flows. The Board may also require the dedication of lands for public access or other use if the dam is to be located on certain streams. (Title 10, V.S.A., Section 706.)

Approval must also be obtained, under the same statutes, for remodelling, reconstruction, alteration, enlargement, or raising or adding to any existing structure.

The appropriate State agency may, after hearing, order the reconstruction, repair or removal of any dam which has been determined to be in any unsafe condition. Upon failure or inability of an owner to comply with the order, the Board may exercise power of eminent domain to acquire such rights as may be necessary to effectuate such remedy as public safety or public good may require. (Title 10, V.S.A., Section 714.)

(3) For Channel Encroachment. Any activity which would alter

or modify the course, current or cross-section of any stream with a drainage area of more than ten square miles, either by fill or excavation of ten cubic yards or more, would require the approval of the Water Resources Department. (10 V.S.A., Chapter 28, Subchapter 2.) Proper stream bank stabilization measures for protection of existing property are exempted from the required approval.

No fill or other artificial encroachment may be placed in any public or boundary waters, and no alteration may be made to the bed of such public or boundary waters (Title 29, V.S.A., Chapter 8), unless approved by the Water Resources Board. Structures not more than fifty feet long and ten feet wide, and those existing structures built under permission granted by the United States Army, Corps of Engineers, are permitted to remain if ordinary navigation is not impeded.

However, such structures may not be permanently enlarged, extended or added to except under authority of the cited act, administered by the Water Resources Board.

No noxious or deleterious materials may be placed into any of the waters of the State.

(4) Developments in Flood Plains. Municipalities may adopt zoning regulations for the regulation, restriction or prohibition of uses of structures at or near flood plain areas (Title 24, V.S.A., Section 4405) within any area designated by the Department of Water Resources as subject to periodic flooding (Title 24, V.S.A., Section 4407).

(5) Discharges of Wastes. No person, without written authorization of the Board, shall discharge into the waters of the State any waste which by itself or in combination with the wastes of other sources reduces the quality of the receiving waters below the classification established for them. This subsection shall not prohibit the proper application of fertilizer to fields and crops. On July 1, 1971, this subsection shall expire and be deemed repealed. On and after July 1, 1971, no person shall discharge any waste, substance or material into waters of the State without first obtaining a permit for such discharge from the Department. This subsection shall not prohibit the proper application of fertilizer to fields and crops. (Title 10, V.S.A., Section 909.)

The Department of Fish and Game also operates in the area of flow regulation in the interest of propagation of fish and other aquatic life.

(6) Protection of Navigable Waters and Shorelands. A wide-ranging enactment during the 1970 legislative session directs the Department of Water Resources to make studies, establish policies and make plans for the efficient use, conservation, development

and protection of the State's water resources and to prepare a comprehensive plan as a guide for the preparation of a State, regional, or municipal land use or development plan. (Title 10, V.S.A., Section 1102.)

The Water Resources Board may establish rules to regulate the uses, areas, conduct and time of utilization on public waters. (Title 10, V.S.A., 1103.)

The Department of Water Resources shall assist the Central Planning Office in the preparation of model bylaws and all State agencies and municipalities are directed to mutually cooperate in the establishment of zoning bylaws covering that area not less than 500 nor more than 1,000 feet inshore from public waters. (Title 10, V.S.A., 1104.) If a municipality fails to adopt such bylaws, or if the adopted bylaws are determined to be insufficient, on June 1, 1972, the Water Resources Board shall adopt bylaws for the municipality. If the municipality fails to administer the bylaws, the Department may act as administrative officer, and the Board as the board of adjustment, administering such bylaws and assessing the costs thereof against the municipality. (Title 24, V.S.A., Section 4410a.)

(7) Administrative and Other Fees. Title 10, V.S.A., Section 909 requires written authorization from the Board before any discharge of waste which by itself or in combination with the wastes from other sources would reduce the quality of the receiving waters below the classification established for them. On or after July 1, 1971, a permit is required from the Department of Water Resources. Rules to be followed in the issuance of such permits are outlined in Title 10, V.S.A., Section 911a, while provisions for temporary permits are outlined in Title 10, V.S.A., Section 912a. The latter section also directs the Water Resources Board to establish pollution charges rates based upon measurable units of the degradation of water quality.

Title 10, V.S.A., Section 575(a)(15) allows the Board to:

"Establish such fees as the board shall by rule determine to be reasonable to defray the expense incident to processing, reviewing and evaluating applications for orders or permits in cases or procedures under its jurisdiction." - 1969, No. 281 (Adj. Sess.), §5, eff. July 1, 1970.

(8) Construction of Public Water Supply. Municipalities must submit plans for proposed water systems to the Department of Health for advice (Title 18, V.S.A., Section 1206). The Water Resources Board administers a program of State aid to municipalities (Title 24, V.S.A., Chapter 74A) for construction, improvement or expansion of water sources or systems.

If an impoundment is involved, permission to construct a dam or dams must be obtained from the Water Resources Board. (Title 10, V.S.A., Chapter 29.) (See also under item (2) previous "For Impoundments".)

Water Quality.

(1) Waste Treatment. The Water Resources Board is the agency charged with requiring the degree of treatment which will protect the stream for use by downstream water users and will enable the stream to attain its desired classification. These duties are set forth in Title 10, V.S.A., Section 575 and Title 10, V.S.A., Chapter 33, Subchapter 1. (Jurisdiction is transferred from the Board to the Department of Water Resources by 1969, No. 292 (Adj. Sess.), eff. July 1, 1971.)

(2) Flow Regulation. The Water Resources Board is charged with recommending the flow to be maintained from regulated discharges to protect the public interest. (Title 10, V.S.A., Chapter 28, Sub-chapter 1.) The Board also is the State agency to cooperate with agencies of the Federal government and of other states in this matter. (Title 10, V.S.A., Section 577.)

II - ADMINISTRATIVE STRUCTURE

INTERSTATE

New England Regional Commission. This agency functions as a cooperative Federal and State partnership primarily concerned with economic and social development of the six-state New England Region. Established under the provisions of Title V of the Public Works and Economic Development Act of 1965 (79 Stat. 552; 42 U.S.C. Sec 3121), the Commission is composed of the New England Governors and a Federal Cochairman appointed by the President. The statute empowers the Commission to undertake regional and technical assistance including planning and demonstration projects directed toward improving the conservation and utilization of human and natural resources. The Federal Cochairman, upon recommendation of the Commission, may furnish supplementary funds to pursue programs that are otherwise qualified for assistance under the provisions of various Federal grant acts where, because of local economic conditions, the full local matching share requirement can not be met. Among the Federal grant acts that may be supplemented by the Commission are the Federal Water Pollution Control Act, Watershed and Protection and Flood Prevention Act, and the Land and Water Conservation Fund Act of 1965.

New England River Basins Commission. This body was established under the authority of the Water Resources Planning Act by President Johnson on September 6, 1967, at the request of the New England Governors' Conference.

In accordance with Title II of the Water Resources Planning Act the Commission shall:

(1) serve as the principal agency for the coordination of Federal, State, interstate, local and non-governmental plans for the development of water and related land resources in its river basin;

(2) prepare and keep up-to-date a comprehensive plan for public and private development of water and related resources;

(3) recommend long-range schedules for data collection, investigation, planning and construction of projects; and

(4) foster and undertake such studies of water and related land resources problems in its river basin as are necessary for preparation of the comprehensive plan.

New England Interstate Water Pollution Control Commission. This Commission is an interstate regulatory agency established by a compact among the States of Connecticut, Maine, Massachusetts,

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New Hampshire, New York, Rhode Island and Vermont. Operations of the Commission are designed to promote and coordinate pollution control on a regional basis and make determinations regarding control measures.

The Commission engages in various activities including: inventories of the status of pollution control systems and progress in pollution control by municipalities and industries; surveys of and research in regard to industrial waste treatment; and research involving the legal aspects of water rights and varieties of usage.

The compact creating this Commission is found in Title 10, V.S.A., Chapter 33, Subchapters 3 and 4.

Connecticut River Valley Flood Control Commission. This Commission was created by the compact appearing in Title 10, V.S.A., Chapter 31, Subchapters 1 and 2. The Commission acts as the coordinating agency for the States of Connecticut, Massachusetts, New Hampshire and Vermont in matters relating to the construction of flood control reservoirs by the Federal Government and adjudicates and makes awards relative to economic and tax losses occasioned thereby.

As a party to the Connecticut River Valley Flood Control Commission, the State of Vermont has concurred in the construction of existing dams at Union Village on the Ompompanoosuc River; at North Hartland on the Ottauquechee River; at North Springfield on the Black River; and at Ball Mountain and Townshend on the West River.

Interstate Commission on the Lake Champlain Basin. This Commission was created by the Champlain Basin Compact (Title 10, V.S.A., Chapter 9) between the States of New York and Vermont to promote the sound development of water and related resources under a comprehensive multi-purpose plan.

Atlantic States Marine Fisheries Compact. This agreement promotes the better utilization of the fisheries, marine, shell, and anadromous, of the Atlantic seaboard by the development of a joint program for the promotion and protection of such fisheries, and by the prevention of the physical waste of the fisheries from any cause. It also has the "power to recommend to the states . . . . the stocking of the waters of such states with fish and fish eggs." Although Vermont is not contiguous with the Atlantic Ocean it is a signatory to this compact in the interest of its anadromous fisheries.

STATE DEPARTMENTS AND AGENCIES

Reorganization of State government (1970, No. 246 (Adj. Sess.) eff. June 1, 1970) has provided for the coordination of natural resources-oriented agencies within an Agency of Environmental Conservation.

Department of Water Resources. The Department of Water Resources is a statutory unit of government (Title 3, V.S.A., Section 212 and Title 10, V.S.A., Section 571) headed by a commissioner appointed for an indefinite term by the Water Resources Board with the approval of the governor.

The Department, under the purview of the Water Resources Board, has authority to exercise all administrative functions of the State relating to:

(1) The protection, regulation and control of the water resources of the State;

(2) Flood control for all purposes;

(3) Classification of the future quality of the waters of the State and abatement of pollution;

(4) Investigation of the surface and ground water resources of the State;

(5) Collection, mapping and evaluation of data pertaining to bedrock and surficial geology of the State; and

(6) Development of a State water resources plan.

The functions of the Department are carried out by the three divisions which make up the Department.

(1) Administrative Division. This Division provides all administrative support for the Department and the Water Resources Board (Title 10, V.S.A., Section 571-579).

(2) Planning and Management Division. This Division administers the following programs within the State relating to water resources:

(a) basis data collection, stream gaging and related survey work (10 V.S.A., Section 575);

(b) all matters relating to flood control, including programs implemented under Public Law 566, Small Watershed Flood Control (10 V.S.A., Section 633-636) and programs through other agencies of the Federal government (10 V.S.A., Sections 575-577, 719);

(c) Supervision and approval of all dams not related to hydro-electric generation (Title 10, V.S.A., Chapter 29);

(d) Operation and maintenance of State-owned flood control dams (Title 10, V.S.A., Section 714);

(e) Water resources planning (Title 10, V.S.A., generally);

(f) Licensing and regulation of water well drillers (Title 10, V.S.A., Sections 1151-1157);

(g) Regulation and control of stream alterations (Title 10, V.S.A., Sections 651-654);

(h) Regulation and control of lands under public waters (Title 29, V.S.A., Chapter 8);

(i) Administer the Department's program of water rights and property acquisition and pond outlet reconstruction under the Federal Bureau of Outdoor Recreation program (Title 10, V.S.A., Sections 21 and 23);

(j) Ground water investigation (Title 10, V.S.A., Section 575b); and

(k) Development of a comprehensive State water resources plan (Title 10, V.S.A., Section 1102).

(3) Water Supply and Pollution Control Division. This division administers the following programs within the State relating to water resources:

(a) Water supply development and construction program (Title 10, V.S.A., Section 578) including administration of State grant-in-aid program (Title 24, V.S.A., Chapter 74A);

(b) Pollution control facilities development and construction program (Title 24, V.S.A., Chapter 77, 79 and 80), including administration of State grant-in-aid program (Title 24, V.S.A., Chapter 70);

(c) Water quality management (Title 10, V.S.A., Chapter 33);

(d) Stream classification program (Title 10, V.S.A., Chapter 33); and

(e) Aquatic biology management, including control of algicides, insecticides and herbicides (Title 10, V.S.A., Section 575 (a)(14)).

The Department of Water Resources works closely with the other

departments and agencies of the State government. Frequently work is coordinated with the Department of Health, the Department of Fish and Game, the Department of Forests and Parks, and the Department of Highways, as well as with/or through the Interagency Committee on Natural Resources, of which the Commissioner of Water Resources is a member.

Within the Department is the Water Resources Board, a quasi-judicial and policy-making body. There are three members of this Board and they are appointed by the governor, with the advice and consent of the Senate, for six-year terms.

Department of Health. The Department of Health is concerned with the protection and preservation of the health of the citizens of the State. Certain programs of the Department are, therefore, directly related with public water supply and come within the purview of this report.

The Bureau of Environmental Sanitation and the Bureau of Laboratories safeguard public and institutional water supplies (Title 18, V.S.A., Chapter 23).

Department of Fish and Game. This statutory unit of government was created to conserve and protect the State's wildlife resources. The Department is organized under the authority granted in Title 10, V.S.A., Section 4041, and its duties are to administer and enforce the laws and regulations adopted under Title 10, V.S.A., Chapters 101, 103, 105, 107, 109, 111, 113, 115, 117, 119 and 121.

The policy-making body within this Department is the Fish and Game Board, a seven-member group appointed by the governor, with the advice and consent of the Senate, for six-year terms. The Commissioner of the Department is appointed by the Board, with the approval of the governor, for a term of six years.

The Department has direct relationships with other agencies of State government, primarily in the conservation area. The Department collaborates with the Department of Water Resources in matters relating to water pollution and stream encroachment or alteration, as well as with other resources agencies through the Interagency Committee on Natural Resources, of which the commissioner is a member. There are also close working relationships with Federal agencies for the protection of fish and wildlife.

Department of Forests and Parks. The Department of Forests and Parks is concerned essentially with the management and improvement of Vermont's system of State forests and parks. Due to the dependence of recreational facilities on ample water resources, the Department is concerned with development of these resources, and as such, must be included within this survey.

While the interest of the Department is more of a resultant nature than in the promulgation of laws, policies, etc., the Department strongly encourages the acquisition of property, including outlet structures, on the public waters of the State. The Department is especially interested in maintaining stable pools, when possible, through the vacation season.

The Department is created and organized under authority granted by Title 10, V.S.A., Chapters 51, 53, 55, 57 and 59. The policy-making body within this Department is the Board of Forests and Parks, a three-member group appointed by the governor, with the advice and consent of the Senate (Title 10, V.S.A., Section 1301) for terms of six years. The Commissioner of the Department is appointed by the Board, with the approval of the governor, for a term of six years.

Interagency Committee on Natural Resources. This agency, created by Title 10, V.S.A., Sections 21-23, consists of the governor, as chairman, and the commissioners of the Departments of Agriculture, Development, Fish and Game, Forests and Parks, Health, Highways, Public Service, and Water Resources. The primary duties of the Committee are to coordinate the activities of the various member agencies for the proper development, management and preservation of Vermont's natural resources, to develop policies for the proper and beneficial development of resources in harmony with the State's comprehensive planning program and to promote the effective application of these policies by the departments affected. In addition, the Committee administers the State recreation plan and State participation in the Bureau of Outdoor Recreation program under the Land and Water Conservation Fund.

Department of Public Safety. The Marine Division, within the Department of Public Safety, was established by Title 25, V.S.A., Section 316(a). The Division is responsible for registering power boats and patrolling the waterways of the State.

Department of Public Service. The Public Service Board, within the Department of Public Service, consists of three members appointed for terms of six years, by the governor with the advice and consent of the Senate (Title 30, V.S.A., Section 3). The chairman of the Public Service Board serves as the Commissioner of Public Service (Title 30, V.S.A. Section 1(b)). Under the provisions of Title 10, Chapter 29, of Vermont Statutes Annotated, the Public Service Board has jurisdiction over dams impounding 500,000 cubic feet of water, used or incident to the generation of electric energy for public use or as a part of a public utility system.

The Public Service Board has supervision over companies, other than municipalities, engaged in the collecting, sale and distribution of water for domestic, industrial, business or fire protection purposes (Title 30, V.S.A., Section 203(3)), and over companies

which operate ferries (Title 30, V.S.A., Section 203(6)).

All construction of generating facilities and all transmission facilities with voltage in excess of 48 kilovolts must first be approved and certified by the Public Service Board (Title 30, V.S.A., Section 246). Before the Board shall issue its certificate of public good, it must be found that the construction is needed for present and future demands of service and will not interfere with orderly regional development, will not adversely effect system stability and reliability and economic factors, and, will not have undue adverse effects on aesthetics, historic sites, air and water purity, the natural environment, and the public health and safety.

BOARDS AND COMMISSIONS

These units of State government have been previously listed under the "INTERSTATE" and "STATE DEPARTMENTS AND AGENCIES" sections above, or will be treated separately under the following heading.

SPECIAL PURPOSE DISTRICTS

Conservancy. None - see Natural Resource Conservation Districts.

Flood Control. None - see Natural Resource Conservation Districts.

Sanitary. None.

Soil and Water Conservation Districts. The 1968 session of the Vermont Legislature amended existing statutes and re-designated Soil and Water Conservation Districts as Natural Resource Conservation Districts, and at the same time, greatly expanded the powers and authority conveyed to such districts.

Under the provisions of Title 10, V.S.A., Section 401 et seq., Natural Resource Conservation Districts have been given wide powers pertaining to the conservation, protection and development of the lands, waters, forests, and wildlife of the State. Such delegated powers permit districts to participate in virtually the full spectrum of Federal, State and locally sponsored projects, including such activities as being a local sponsor of Public Law 566 small watershed flood control projects.

Supervision over districts is exercised by the State Natural Resource Conservation Council (Title 10, V.S.A., Section 403), consisting of the Director of the State Extension Service, the Commissioner of Agriculture, and the chairman of the Vermont Water

Resources Board, or their designated representatives, and one member elected from each of the Natural Resource Conservation Districts. In addition, the chairman of the State Forests and Parks Board, the chairman of the State Fish and Game Board, or their designated representatives, and the Director of the Central Planning Office are advisory members. A representative of the United States Secretary of Agriculture may be appointed as an advisory member.

The Council exercises control over all funds appropriated by the Legislature for the purposes delineated above.

OTHER POLITICAL SUBDIVISIONS

Municipal. Under Vermont law (Title 1, V.S.A., Section 126), a municipality is defined as including a city, town, town school district, incorporated school or fire district or incorporated village and all other governmental incorporated units.

(1) City, town or incorporated village. The powers and authority conveyed by statute to special districts or municipalities, are likewise conveyed to cities, towns or incorporated villages, and the following delineation of powers and authority pertaining to special purpose districts are to be read as including such powers and authorities being conveyed to cities, towns and incorporated villages.

(2) Fire districts. Fire districts may be established for the purpose of providing fire protection to residents of the district. Such district may consist of an entire town or a portion of a town (Title 20, V.S.A., Section 2481).

In addition to fire protection, fire districts may also engage in a variety of other enterprises, including the construction and operation of sewers and sewage treatment facilities (Title 20, V.S.A., Section 2601).

Fire districts may levy taxes (Title 20, V.S.A., Section 2601) on properties located within the district for funds to operate the district.

The right of eminent domain has been granted to fire districts by Title 20, V.S.A., Section 2606.

(3) Consolidated water districts. Two or more municipal corporations are permitted, under Title 24, V.S.A., Chapter 74, to join together to establish a consolidated water district. Under the provisions of Title 24, V.S.A., Section 3301 et. seq., municipal corporations may exercise the power of eminent domain. Consolidated water districts may establish water rates and levy taxes as necessary (Title 24, V.S.A., Section 3348 et. seq.).

III - POLICY

CENTRALIZED VS. DECENTRALIZED RESPONSIBILITY

The ultimate responsibility for water management functions is found at the State agency level, in particular, with the Water Resources Board. The various statutes that require approval from the interested State agencies have resulted in a centralized control of these management functions and the State agencies are active in enforcing these statutes.

An example of this centralized policy is Title 10, V.S.A., Section 575(a) 13, which grants the Water Resources Board jurisdiction to administer loans, grants and contracts from the Federal, State, and local governments, and from other sources, public and private, with the approval of the governor, for furthering the water resource programs of the State.

A similar centralization of responsibilities appears in the area of stream pollution and water quality control. The water Resources Board is responsible for the protection, control and regulation (Title 10, V.S.A., Section 571) of the water resources of the State, and for the future classification and attainment of water quality (Title 10, V.S.A., Chapter 33). The Board has actively enforced such statutes and has prosecuted and enjoined several individuals and businesses which had been found to be in violation of the statutes.

Further illustrations of the ultimate responsibility which is found at the State level is the Water Resources Board's supervision over flood control activities and over the construction of dams. These regulatory authorities exercised by the Board have been pointed out previously in this document.

FINANCING

Financing for the various water management projects is furnished at the level of governmental unit involved. Local projects are financed by funds derived at the local level augmented by State and Federal funds administered at the State level.

An example of the local level financing is the construction of water pollution control facilities. Municipalities may levy taxes or user charges on the ratable property within the community (Title 10, V.S.A., Section 3608) and may likewise bond to secure the necessary funds.

The State cooperates with municipalities and further administers Federal and State grant-in-aid and loan programs.

COOPERATION, COORDINATION, AND COST-SHARING

With Federal Programs. The Water Resources Board is authorized by statute (Title 10, V.S.A., Section 575(a)(3)) to have supervision over and act as the State's agency in all matters affecting flood control, and (Title 10, V.S.A., Section 575(a)(4)) to cooperate with agencies of the Federal government in all matters relating to interstate streams and all matters relating to grants-in-aid to municipalities for construction or operation of sewage treatment facilities. The Board may accept (Title 10, V.S.A., Section 575 (a)(13)) such financial assistance from Federal agencies as may be necessary, or may participate and provide such financial assistance from State funds as may be necessary, within the limits of authorized expenditures.

All programs concerning water supplies and water pollution control are carefully coordinating with all Federal programs. The Water Resources Board cooperates with all Federal agencies toward the solution of problems of water pollution control. Matching funds are available to the Department of Water Resources under Public Law 660 for program development.

The Water Resources Board, acting as a co-sponsor, works closely with the Soil Conservation Service of the United States Department of Agriculture in developing small watershed projects under Public Law 566.

Interstate. The principal areas of interstate cooperation, coordination and cost-sharing are in flood control and in stream sanitation. The appropriate commissions have been delineated and the compacts which enumerate their powers and duties have been listed under "Administrative Structure - Interstate".

The states which are members of these interstate commissions appropriate the necessary funds for salaries, office and administrative expenses to the proper proportion as determined by the provisions of the enabling compact.

The Department of Water Resources is responsible for cooperation and coordination with the agencies of any other state when these agencies are engaged in work which affects the functions of the Department.

With Political Subdivisions. As previously discussed, there is a great deal of cooperation and coordination between State agencies and political subdivisions including cost-sharing and administration of Federal aid programs in reference to eligible projects. Each division of the Department of Water Resources cooperates closely with political subdivisions when these local bodies are engaged in a project which comes within the jurisdiction of the particular division. The interested division provides

planning, technical aid, and the services of divisional personnel, as well as financial assistance in eligible projects, when approved by the Water Resources Board.

In the areas of water supply and sewage facilities, the Water Supply and Pollution Control Division of the Department cooperates closely and to the fullest extent possible with local political subdivisions. State funds are available to these local governmental units for the planning and development of water and sewage treatment facilities (Title 24, V.S.A., Chapter 74A; Section 3614; Chapter 80).

In the area of watershed protection and flood prevention, the Water Resources Planning and Development Division provides close cooperation with local political subdivisions in developing potential projects. State funds are available for up to 100 per cent participation in non-Federal costs of such projects.

Multi-Purpose Operations. Cooperation among the State agencies in developing water management projects is essential. The number of State agencies or local political subdivisions which may be involved in the development of a water project necessitates a very close cooperation among the concerned parties.

Examples of this type of close coordination include the Department of Water Resources' project of lake outlet acquisition and construction. Such projects must be coordinated with park development or expansion programs of the Department of Forests and Parks and with fisheries management programs of the Department of Fish and Game.

Programs involving fisheries management must also be considered by the Water Resources Board and the Department of Water Resources in the classification of the future quality of water in the State's continuing program of stream pollution abatement.

The construction and operation of flood control reservoirs must also take into account and provide for the coordinated multiple use development in order to insure the maximum beneficial utilization. Flood control reservoirs require close and coordinated effort between such agencies as the Water Resources Board and the Department of Water Resources, the Department of Forests and Parks, the Department of Fish and Game, the Department of Highways, and the Interagency Committee on Natural Resources, as well as with the concerned local political subdivisions.

USE OF EXISTING AUTHORITIES

The many State agencies, departments and commissions, in executing their functions, make maximum use of all existing authority

to develop and conserve Vermont's water resources.

CHANGES

The Water Resources Board was, prior to the 1959 General Assembly, known as the Water Conservation Board. The same legislation (Title 3, V.S.A., Section 212 et seq.), established the Department of Water Resources, which previously had been an adjunct or administrative arm of the Water Conservation Board. These changes did not, however, involve any major changes in policy execution but did confer a more executive stature to the Department.

In recent years, the water resources field has been the scene of vast changes. State aid programs in water supply, water pollution control facilities, and in small watershed flood prevention projects as well as statutory controls on stream alteration or encroachment, lands under public waters, and registration of water well drillers are some of the new authorities which have been granted by the Legislature in its recognition and sanction of a widely expanded program of control and development of Vermont's water resources.

The State of Vermont is engaged, through its Legislature and various executive departments, in a continual program of planning, evaluation and development of all aspects relating to the conservation, preservation, use and enjoyment of Vermont's water resources.

IV - PROGRAMS

RESEARCH

Several research programs are being conducted by the many State agencies concerned with water resources.

There has been established at the University of Vermont, the Vermont Resources Research Center established under Public Law 88-379. Presently, the Center is engaged in a variety of research programs, with a concentration of investigative effort into the myriad aspects of Lake Champlain, Vermont's largest water resource.

The Department of Fish and Game has several research programs being conducted. A comprehensive stream survey of fisheries has been completed. Studies presently underway include investigations relative to the re-establishment of anadromous fishes (Atlantic salmon and shad) in conjunction with agencies of New Hampshire, Massachusetts and Connecticut and the Federal Government, and studies relating to commercial fisheries potential of Lake Champlain in conjunction with the State of New York.

The Department of Highways, in cooperation with the United States Geological Survey, is engaged in a program of small watershed stream gaging for the purpose of determining flood flows for culvert and bridge design.

The bulk of State participation in research projects is carried on by the Department of Water Resources, the State's paramount agency in the field of water resources (Title 10, V.S.A., Section 1102). The Department participates in cooperative stream gaging and other research projects of the U.S. Geological Survey and of the Agricultural Research Service, U.S. Department of Agriculture. A State-wide survey of ground water availability, being conducted in cooperation with the U.S. Geological Survey, is nearing completion of its first phase.

Research into the problems created by, and the methods of treatment and elimination of industrial wastes, including woolen mill wastes, wastes from stone products industries, and milk industry waste, are being conducted by the Department's Water Supply and Pollution Control Division.

In addition, the Department of Water Resources is conducting studies relating to water supply, low stream flow and stream regulation, thermal pollution, municipal and industrial wastes, water uses and demand and a variety of other problems.

DATA COLLECTION AND INTERPRETATION

The Department of Water Resources conducts a continuous program of compiling water data from all sources for dissemination for general use. Basic inventories are continually being revised and up-dated.

Inventories are prepared for all phases of water demand and usage. As more complex and changing usages develop, inventories must be revised with the incorporation of more and newer data.

A need exists for the development and cataloging of a more versatile inventory system to meet the demand of the various and changing requirements.

PLANNING

While many individual planning programs have been initiated in the past, an over-all, long-range plan for a program of water resources development in Vermont has not been formulated. While the Vermont Planning Council is delegated with the responsibility of coordination of the planning activities of departments of the executive branch of State government (Title 10, V.S.A., Section 304(c)(1)), the primary effort in water resources planning rests with the operating agencies, in particular, the Department of Water Resources.

Specific phases of an overall water resources development plan have been completed. Certain of these completed phases include the adoption of general policy, water use classes and standards of quality for intrastate and interstate waters, and implementation plan, by the Water Resources Board, as prepared by the Water Supply and Pollution Control Division of the Department of Water Resources, and the State Recreation Plan (dependent to a large degree on water-based recreation) developed under the auspices of the Inter-agency Committee on Natural Resources.

An example of planning of this type, is the preparation of rural comprehensive water and sewage plans prepared for all counties of the State. These are preliminary studies for all towns with a population of 2,500 or less.

A thorough re-examination of Vermont's potential growth and demand upon its water resources needs to be made before final policy decisions and priority of programs can be ascertained.

CONSTRUCTION AND DEVELOPMENT

Flood Control. In 1928, the State of Vermont began its flood

control programs, on the heels of its most disastrous flood in history, which occurred in November of 1927.

The 1933 General Assembly appropriated funds to secure title to lands and water rights, and to provide all necessary easements to enable the construction of three flood control dams within the Winooski River basin by the Civilian Conservation Corps under the aegis of the U.S. Army, Corps of Engineers. The completed structures are operated and maintained by the Department of Water Resources.

The 1966 General Assembly authorized the Water Resources Board to assume up to 100 per cent of the non-Federal costs of Public Law 566, Small Watershed Projects, for flood control, public recreation, fish and wildlife development, and storage for stream flow augmentation for multiple purposes (Title 10, V.S.A., Section 637) and provided funds for those purposes. There is presently one such project, involving four flood control dams and a channel diversion, under construction.

Water Supply. The Tri-Town Water District has recently completed and put into operation its first-in-the-Nation rural water supply assisted by State and Federal grants-in-aid.

Several communities within the State have completed modifications or extensions of existing public water supply facilities. Additional municipalities are in various stages of study or planning for new or improved sources or facilities for potable water supply. Such completed or proposed improvements have been accelerated by technical and financial assistance furnished by the Department of Water Resources.

A continuing program will remain a necessity to provide adequate water supplies for many of the State's smaller communities and for the modification and expansion of existing facilities which are reaching the maximum capacity of present systems.

Water Quality Control. Under the State grant-in-aid program and the Public Law 660 program, virtually all sewerable municipalities have constructed or are in the process of designing and constructing municipal water pollution control facilities, in concert with the Water Resources Board's and Department of Water Resources' stream classification plan and water quality implementation plan.

Hydro Power. The Water Resources Board exercises authority in the construction and development of hydro-power insofar as cooling waters may degradate the waters of the State. The Board also exercises authority insofar as cooling water and radioactive or other wastes from nuclear power generation is concerned.

General Recreation. In order to provide additional recreational

opportunities for residents and tourists alike, the existing park system and State-owned lands are being expanded at a rapid rate. With the importance now afforded water-based recreation, all interested agencies have been participating in the increased development of the State's water resources. Public access is being provided to nearly all boatable waters and acquisition and control of outlets of public lakes and ponds are being acquired and developed to provide stabilized surface water levels to permit orderly and proper public and private development.

Fish and Wildlife. The Department of Fish and Game is responsible for the conservation and propogation of fishes in all public waters of Vermont. The Department has a long-standing and continuing program of habitat improvement and impoundment construction for wildlife enhancement and public fishing. Other current programs of the Department have been listed under the heading "Research".

REGULATION

Water Use. Reasonable use of water, insofar as quantity or quality is not adversely affected, is not subject to statutory control. Uses which may be detrimental to the public good are discussed in the following subchapter.

Water Quality.

(1) Domestic wastes. The Water Resources Board regulates the degree of treatment required for domestic wastes before discharge of any effluent into the waters of the State. Further, Title 10, V.S.A., Section 909 provides that no new sources of pollution could be created after June 1, 1949, unless authorized by the Board, and Title 10, V.S.A., Section 903 provides that all waters of the State, not previously classified, shall become Class C waters on January 1, 1969, unless special permits issued by the Board, authorized the temporary discharge of wastes.

(2) Industrial Wastes. The same statutes apply to industrial wastes as found applicable to domestic wastes. The Water Resources Board may require industries to provide special treatment for the purpose of neutralizing or removing toxic materials which may be present in this type waste.

(3) Agricultural Wastes. Agricultural wastes are treated in the same manner as other wastes, with the exception of runoff from proper application of fertilizer to fields or crops (Title 10, V.S.A., Section 909).

(4) Special Problems. No discharge of edgings, slabs, sawdust, shavings or any other sawmill waste is permitted (Title 10, V.S.A., Section 951). Wastes from stone products presents a

special problem compared with other industrial wastes. The wastes are generally inorganic and pollute the waters by adding to the turbidity and by coating the stream bottoms with a finely grained waste, thereby stifling biologic growth. All such wastes have been ordered to be removed from discharges to streams by means of settling lagoons.

Construction. Construction of water management projects, public or private, is supervised and approved by the Department of Water Resources, from both regulatory and administrative aspects. With the passage of many new pieces of legislation, virtually all phases of water management fall within the purview of the Department of Water Resources or the Water Resources Board.

If the facility involves the construction of a dam impounding 500,000 cubic feet or more of water, the alteration of relocation of a stream, lands under public waters, or water pollution control facilities, the work would require necessary permits from the Water Resources Board. In addition, if State funds are to be involved in the grant-in-aid programs for the construction of water supply, water pollution control facilities, or small watershed flood control projects, then such facilities and grants-in-aid must be approved by the Department of Water Resources and the Water Resources Board.

Well Drilling. The Water Resources Board has supervision over the licensing of water well drilling (Title 10, V.S.A., Chapter 35) and the establishment of necessary rules and regulations. The collection and evaluation of data compiled in the drilling of wells is administered by the Department of Water Resources.

Presently, a permit is not required prior to the construction of a well.

Channel Encroachments. The Water Resources Board, through the Department of Water Resources, regulates any construction that encroaches upon the channel of any stream with a drainage area of ten square miles or more (Title 10, V.S.A., Chapter 28, Subchapter 2).

Use of Flood Plains. There is presently no State-wide statutory authority for control of the use of flood plains.

However, flood plain zoning studies are presently underway in a number of communities. Following such studies, municipalities may, under authority granted by Title 24, V.S.A., Section 4407(9), regulate the permitted uses and type of construction within flood plain areas within areas delineated by the Department of Water Resources.

RESERVOIR SITES

The Department of Water Resources has prepared a map survey of all potential impoundments within the State.

Investigations will be conducted by the Department of Water Resources and the Department of Fish and Game to determine the feasibility of those sites which appear most promising for future development.

The Department of Water Resources has been directed to prepare a classification of the streams within the State to determine whether dams constructed for private use would be likely or unlikely to be in the public interest. (Title 10, V.S.A., Section 707a.)

V - PROJECTIONS

POLICY AND PROGRAM TRENDS

Trends indicate increased cooperation and participation with the Federal Government by the various State agencies.

In the field of water pollution, the implementation plan for water quality has been developed setting forth the proposed schedule for the classification and management of the future water quality of all waters of the State.

After January 1, 1971, no industry shall be permitted to discharge any wastes into the waters of the State without written approval of the Water Resources Board. Any such permit granted by the Board will be dependent upon the prior acceptance by the Board of the industry's plans and schedule for construction of any required pollution abatement facilities.

It is anticipated that the State's program for the classification of the future water quality of the waters of the State will be complete by the end of 1970. Schedules for the attainment of the assigned water quality for each particular water of the State will call for installation of the necessary pollution abatement facilities within two to three years after the date of classification, depending upon financial capabilities.

It is expected that all necessary water pollution control facilities will be substantially complete and in operation by December 31, 1974.

An increased interest in and utilization of flood plain zoning can be expected during the next decade, with the completion of flood plain studies of the affected locations.

Water supply facilities for the State's principal communities are expected to be enlarged and capacities increased as demands and requirements increase, particularly in the industrial field. Smaller communities without municipal systems, or whose existing systems are inadequate, will need to establish adequate systems for public water supply.

WATER MANAGEMENT PROBLEMS - POSSIBLE SOLUTIONS

Water Supply.

(1) Municipal. With the increasing water utilization in a modern society, particularly for industrial and manufacturing purposes, existing supplies of potable water will be greatly taxed.

More communities will be forced to seek newer, larger and more dependable supplies. Those communities within the Champlain Valley, located adjacent to Lake Champlain, may, as the need arises, be forced to turn to the lake for further water supply. Throughout the remainder of the State, usage of ground water, and construction of new surface water reservoirs, can be expected to intensify.

Existing Federal and State grant-in-aid programs will need to be expanded, and a higher level of funding provided, to meet the increased activity in this field.

(2) Industrial. The trend for new industrial developments to be located in more rural areas, will place many such developments outside of areas serviced by municipal water supply systems. Utilization of ground water sources has been, and will continue to be, greatly increased.

Industries which are or will be located adjacent to flowing streams will need to be considered in programs of stream flow maintenance or flow supplementation.

(3) Agricultural. Vermont agriculture consists, in the main, in dairy farming. While milk cow population has remained fairly constant, the number of farms in operation has decreased greatly, resulting in fewer but larger farms remaining in operation. This trend toward concentration of herds has likely resulted in more intensive water supply demands at productive farms.

Historically, dairy farm water supplies have been from springs and shallow wells, both of which have not proven to be dependable in times of drought. Drilled wells, which will tap the more dependable ground water supplies, will be needed at many of the dairying enterprises.

At present, there is very little water used for irrigation. Presently, water is used at apple orchards and similar enterprises.

Increase in use of water may represent a substantial percentage increase as farms become more diversified. An important factor in this field is that water used for irrigation cannot be reused for other purposes as it returns to the atmosphere through evapotranspiration.

The demand for irrigation uses is concentrated during the growing season. Demand is highest when there are drought conditions existing. These factors then, will require that water must be stored and properly controlled to be available when needed for irrigation uses.

Solutions to agricultural water supply problems will require a better use of existing water supplies by the individual farms.

Better conservation practices are needed to protect or increase available water supplies.

Water Quality Control.

(1) Waste Treatment. Sewage and sanitary wastes from communities and industries represent the major source of pollution of streams.

The recently adopted, and previously mentioned classification program and implementation plan, will provide for the orderly removal and proper treatment of all wastes presently discharged to streams from these sources.

(2) Problem Areas. Low flows in streams due to diurnal fluctuation in releases from power generation reservoirs, can result in water quality falling below the desired standard. Such conditions will require either further treatment of wastes before discharge to the receiving stream, or controlled upstream releases for dilution purposes, or both.

Flood Control.

(1) Critical Areas. In practically every area of the State, problems of flooding exist, primarily due to ice jams, flood plain encroachments, and channel restrictions in built-up areas. Alleviation has been or will be provided to areas which lie downstream of completed or proposed flow control reservoirs.

(2) Local Protection. There presently exists the need for local protection works at Rutland and Waterbury to protect those communities from the reoccurrence of floods which have occurred in the past.

(3) Small Watershed Protection. Many of the smaller watersheds within the State have histories of damaging floods. The active participation of the State and its program of financial assistance will enable the construction of necessary works of improvement.

(4) Flood Plain Zoning. Current flood plain studies and enabling legislation which permits the zoning of flood plain areas, has provided the necessary tools to reduce future damages in such areas.

Recreation.

(1) General. The proximity of Vermont to the great population centers in the eastern megalopolis, will place rapidly expanding pressures on existing recreational facilities.

The program of expansion of existing facilities, development of new facilities, providing of additional water surface, and acquisition of rights to stream banks as delineated in the State Recreation Plan, will provide solutions to the increased recreational demands.

(2) Fish and Wildlife. There are many problems to be solved concerning fish and wildlife. Among these are management of State-owned lands to improve the habitat for large and small game and upland game birds, management of wetlands for the propogation of waterfowl and improvement of stream habitat for the propogation of, and improvement of, fisheries. The current programs of the Department of Fish and Game, carried out as a part of the State Recreation Plan, will concentrate efforts in these activities.

Other areas of concern are:

(A) Maintenance of stream flow to provide adequate water temperatures and oxygen levels;

(B) Fluctuation of water levels in reservoirs which can adversely effect spawning; and

(C) Competition between fishermen and high-speed motorboats and water skiers for use of available water surfaces.

The latter problem may be solved by zoning of waters either by area or time of usage. Enabling legislation permitting this zoning on public waters was passed in 1970 (Title 10, V.S.A., Chapter 34).

(3) Boating. The problems vis-a-vis boaters and fishermen were discussed previously under the fish and wildlife section. Mainly, it is one of regulation and it increases as the number of boats and boating enthusiasts increase.

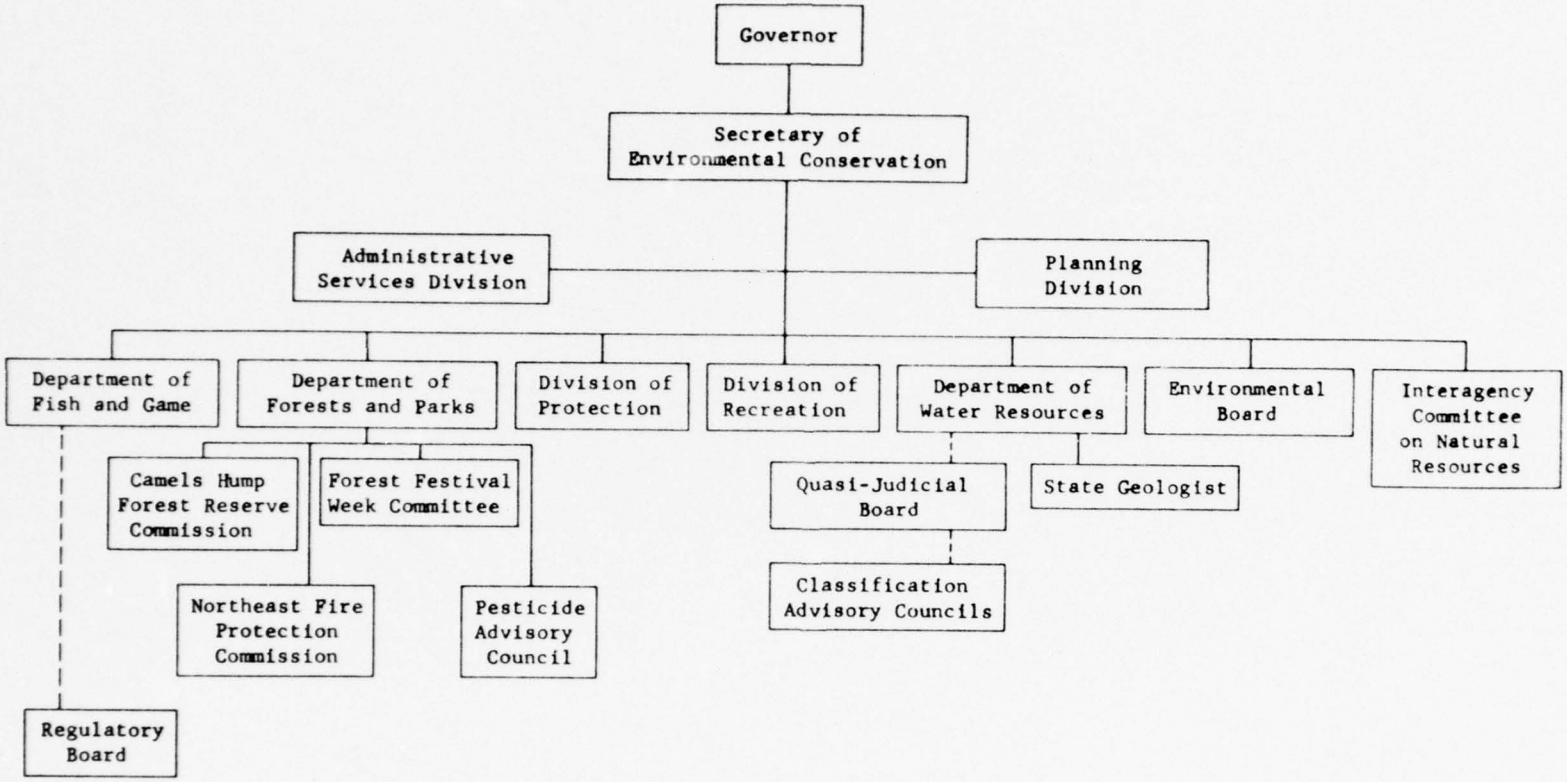
The Marine Division of the Department of Public Safety registers motorboats and promotes safety and courtesy among boaters.

Hydro-Power. The diurnal fluctuations of stream flow caused by releases from power reservoirs creates problems of fisheries management and water quality control. These aspects have been discussed in their respective sections. The requirement that a sustained minimum flow must be maintained is a necessity and must be incorporated in any license or permit issued to the constructing utility.

FIGURE S-1(VT)

STATE OF VERMONT

AGENCY OF ENVIRONMENTAL CONSERVATION



Attached for Administrative Support:

-- Interstate Commission on Lake Champlain Basin
-- New England Interstate Water Pollution Control Commission
-- State Natural Resources Council
-- Connecticut River Flood Control Commission

Effective June 1, 1970

COMMONWEALTH OF MASSACHUSETTS

Prepared by

Commonwealth of Massachusetts
Water Resources Commission
Division of Water Resources

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COMMONWEALTH OF MASSACHUSETTS

I - STATE LAW

SYNOPSIS

State constitution. While the Constitution of the Commonwealth of Massachusetts amply protects the equal rights of its citizens to safety, happiness and private property, it delegates to the legislature broad powers to act for the common good. Article X of the Declaration of Rights states that "no part of the property of any individual can, with justice, be taken from him, or applied to public uses, without his consent, or that of the representative body of the people". However, it further provides that "whenever the public exigencies require that the property of any individual should be appropriated to public uses, he shall receive reasonable compensation therefor".

Resources acquisition, development and regulatory programs have an additional firm basis of constitutional authority in Massachusetts. An amendment, Article XLIX, states that, "The conservation, development and utilization of the agricultural, mineral, forest, water and other natural resources of the Commonwealth are public uses, and the general court shall have power to provide for the taking, upon just payment therefor, of lands and easements therein, including water and mineral rights, for the purpose of securing and promoting the proper conservation, development, utilization and control thereof and to enact legislation necessary or expedient therefor".

Statutes regulating land use can also be enacted under the constitutional provision which empowers the general court to regulate building zones in cities and towns. (Massachusetts Constitution Article LX, of the Amendments).

The Massachusetts Constitution restricts taxation only in the most general manner, giving much authority to the legislature to enact statutes concerning taxation. While the constitution protects the citizen against a tax without consent, it stipulates that the individual is obliged to contribute his share of the expense to promote the common good. The individual's acquiescence to taxation is made through the action of the representative body. (Massachusetts Constitution, Articles, X, XXIII, Declaration of Rights).

Borrowing at the State level is regulated by Article LXII, Sections 2, 3 and 4 of the Amendments. Debt limits governing municipal finances are contained in the general laws (Statutes).

The administrative framework of the Massachusetts Water

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Resources Commission and its two constituent divisions, the Division of Water Resources, and the Division of Water Pollution Control, is governed by the constitutional amendment which limits to twenty the number of departments authorized to conduct the executive and administrative business of the Commonwealth. (Massachusetts Constitution, Article LXVI of the Amendments).

Some basic resource law actually predates the Massachusetts Constitution. The Ordinance of 1641-47 reserves the use of "great ponds" for the public. Some of these early colonial ordinances remain valid because of the constitutional provision which stipulates that former laws approved and practiced by the Province, Colony or State of Massachusetts Bay shall remain in force until altered or repealed by the Legislature, or unless repugnant to the Constitution. (Massachusetts Constitution Chapter VI, Article VI).

Statutes. A listing of significant Massachusetts legislation would certainly include the following (references are to current general laws, Chapter and Sections abbreviated as "GL" "c" and "s", and include all amendments to date).

(1) State government. The 1956 law creating a Division of Water Resources in the Department of Natural Resources under the control of a special nine member Water Resources Commission and authorizing said Division to act as the coordinating agency in all water programs (GL c. 21, ss. 1, 2, 8-16).

The 1962 Law creating the Public Access Board and Public Access Fund (GL c. 21, ss. 17, 17A).

The 1963 law creating in the Department of Natural Resources a Division of Conservation Services, the Committee for the Conservation of Soil, Water, and Related Resources and the Conservation Districts (GL c. 21, ss. 1, 18-25).

The 1963 law regulating the dredging or filling of coastal wetlands which provides procedures for applications, hearings and determinations involving the towns, the Department of Public Works and the Division of Marine Fisheries (GL c. 130, s. 27A).

The 1965 law which further protects wetlands by providing the legal mechanism for the taking in fee, in certain cases, of coastal wetlands (GL c. 130, s. 105).

The 1966 Massachusetts Clean Waters Act creating the Division of Water Pollution Control in the Department of Natural Resources under the control of the Water Resources Commission (GL c. 21, ss. 26-50).

The 1965 law regulating the dredging or filling of inland

wetlands which is similar to the 1963 coastal law, but differs in detail (GL c. 131, s. 40).

The 1968 Inland Wetlands Act which further protects inland wetlands and provides a mechanism for the taking in fee, in certain cases, of inland wetlands (GL c. 131, s. 40A).

The laws creating the Department of Natural Resources and prescribing the duties and functions of the various other Divisions of the Department of Natural Resources (GL c. 21, ss. 1, 2-7).

The laws relating to the role of the Department of Public Health in the water resource area, especially in the protection of water supplies (GL c. 111, ss. 5, 5f, 5g, 17, 162, 164, 167, 170-173, 184A).

The laws relating to marine fisheries (GL c. 130, ss. 1-104).

The laws relating to inland fisheries and fishways and great ponds (GL c. 131.)

The law authorizing the Commissioner of Natural Resources to acquire land and waters for recreation, etc. (GL c. 132A, s. 2A).

The laws relating to the Department of Public Works, Division of Waterways concerning tidal waters, tidelands, great ponds and certain rivers (GL c. 91, ss. 1-62).

The laws relating to mills, dams and reservoirs (GL c. 253, ss. 1-62, c. 266, ss. 137, 138).

The State Reclamation Board and reclamation district enabling laws (GL c. 252, ss. 1-24).

The law authorizing the Metropolitan Water and Sewage Districts (GL c. 92, ss. 1-32).

(2) Cities, towns, and counties. The 1965 law which authorizes District Planning Commissions to make plans and recommendations to cities and towns regarding water resources, water supplies and sewers (GL c. 40B, ss. 5, 5A).

The 1957 Town Conservation Commission enabling laws (GL c. 40, s. 8C).

The 1960 enabling law providing authority for matching grants to cities and towns by the Commissioner of Natural Resources for approved acquisition and development projects (GL c. 132A, s. 11).

The 1966 enabling law providing authority for cities and towns to borrow above debt limits for the repair and construction of reservoirs and filter beds (GL c. 44, s. 8).

The authorizations for cities and towns to provide water and sewerage services (GL c. 40, ss. 21, 38-42I, GL c. 41, ss. 69-69b and GL c. 83, ss. 1024).

The law authorizing and regulating the establishment of zoning districts in cities and towns including flood plain zones (GL c. 40A, s. 2).

The law which impose debt limit restrictions on municipal financing (GL c. 44, ss. 1-10).

The public beach district enabling laws (GL c. 40, ss. 11A-13).

The law which provides tax loss reimbursement to cities and towns for property taken for flood control purposes (GL c. 58, s. 17A).

The law which provides for payment in lieu of taxes for property held in one town by another city, town or district for water supply purposes (GL c. 59, ss. 6, 7).

The law which authorizes counties, cities and towns to appropriate money for works of improvement to waterways (GL c. 91, ss. 29, 29A).

The law establishing the Massachusetts Port Authority (Chap. 465, Acts of 1956).

The Port of Boston Commission enabling law (GL c. 6, ss. 53-55).

The law placing responsibility for the safety of dams under the Department of Public Works (GL c. 253, ss. 44-49).

The law which provides that each coastal community shall have at least one common landing (GL c. 88, s. 14).

The law which provides for county layout of shore reservations (GL c. 45, ss. 23A-C).

The law which provides a public petition procedure to request the construction of public access to great ponds by counties (GL c. 91, s. 18A).

(3) Other. The 1967 law which lists tax exemptions for equipment used for pollution abatement (GL c. 59, s. 5(39)).

The 1965 law which requires that no permit for a building requiring water service may be issued unless a water supply is available (GL c. 40, s. 54).

The 1966 law which allows for an elective tax deduction and exemption for the construction or improvement of industrial waste treatment facilities (GL c. 63, s. 38D).

The laws which regulate the operation of water and aqueduct companies (GL c. 165, ss. 1-28).

The laws which created and regulate the activities of the Commission on Interstate Co-operation (GL c. 9, ss. 21-24).

Case Law. The following is a list of important decisions in Massachusetts water law.

(1) Sacco v. D.P.W. 1967 Mass. Advance Sheets 1007 defining public rights to great ponds. Other cases relating to great ponds include: Slater v. Gunn, 170 Mass. 509, 49 N.E. 1017, 4 L.R.A. 268 (1898); Rowell v. Doyle, 131 Mass. 474 (1881); Peoples' Ice Co. v. Davenport, 149 Mass. 322, 21 N.E. 385, 14 Am St. Rep. 425 (1889); Inhabitants of Lynnfield v. Inhabitants of Peabody, 219 Mass. 322, 196 N.E. 977 (1914); Watuppa Reservoir Co. v. City of Fall River, 147 Mass. 548, 18 N.E. 465, 1 LRA 466 (1888).

(2) Ware v. Allen, 140 Mass. 513, 5 N.E. 629 (1886) stating the rights of riparian owners on a stream to the use and enjoyment of a streams natural flow subject to such interruption as is necessary and unavoidable by the reasonable and proper use of the water in the stream above.

(3) Stratton v. Mt. Hermon Boy's School, 216 Mass. 83, 103 N.E. 87, 49 L.R.A. (N.S.) 57 (1913). Held that while a riparians use of water must be within the watershed of a stream, that diversion of a stream outside of its watershed, if for a reasonable use, may not be a cause for action of a lower riparian owner unless actual damage results.

Other cases involving riparian rights include: Whitney v. Wheeler Cotton Mills, 151 Mass. 396, 24 N.E. 774, 7 L.R.A. 613 (1890); Boston Belting Co. v. City of Boston 183, Mass. 254 (1903).

(4) Davis v. Spaulding, 157 Mass. 431, 32 N.E. 650 (1892) stating that "it is generally held that water percolating underground, and not running in a definite stream or watercourse, is in law part of the land itself" and as a constituent part of the land is absolute property. Like land itself, the percolating waters cannot pass by a deed of other land as appurtenant to the land conveyed.

(5) Gallerani v. U.S., 41 F Supp. 293 (1941) stating that "Both at common law and under the law of Massachusetts .... there is no property right in underground percolating waters, and any injury resulting from the loss of same through the lawful acts of an adjoining landowner is considered damnum absque injuria."

(6) Cowdrey v. Inhabitants of Woburn, 136 Mass. 409 (1884). Holds it immaterial whether pond waters are taken by direct pipe or by percolation insofar as the liability for the lowering of pond water is concerned. Other cases concerning percolating or ground waters include: Hollingsworth & Vose Co. v. Foxborough, 165 Mass. 186, 42 N.E. 574 (1896); Inhabitants of Town of Holliston v. Holliston Water Co. 306 Mass. 17; 27 N.E. 2d 194 (1940).

(7) Stanchfield v. City of Newton, 142 Mass. 110; 7 N.E. 703 (1886). Concerning surface drainage defining a watercourse as having a certain direction, regular channel, banks and sides. Other cases relating to drainage include: Jackman v. Arlington Mills, 137 Mass. 277 (1884); Wells v. New Haven and Northampton Co., 151 Mass. 46; 23 N.E. 724, 21 Am. St. Rep. 423 (1890); Bamard v. City of Newton, 154 Mass. 255, 27 N.E. 995 (1891); Ryder v. Town of Lexington, 303 Mass. 281, 21 N.E. 2d 382 (1939).

(8) Sprague v. Dorr, 185 Mass. 10, 69 N.E. 344 (1904) stating that laws forbidding the discharge into streams of polluting matter of such kind and amount as will corrupt or impair the quality of the water are a reasonable limitation on private rights of property in reference to the common good.

(9) Parker v. American Woolen Co. 195 Mass. 591, 81 N.E. 468, 10 L.R.A. (N.S.) 584 (1907) stating that no riparian proprietor has the right to use the waters of a natural stream in such a manner as will materially corrupt to the substantial injury of a lower proprietor. Other cases concerning water pollution include: Inhabitants of Brookline v. Mackintosh, 133 Mass. 215 (1882).

(10) Commonwealth v. Alger concerns riparian and public rights on navigable streams. Other cases concerning navigable waters include: Comm. v. Chapin, 22 Mass. 199, 202; Brosnan v. Gage, 240 Mass. 113, 118; Ingraham v. Wilkinson, 21, Mass. 268, 271; and Comm. v. Alger, 61 Mass. 97 (1851).

(11) Foster v. S. Volpe and Co. Inc. 349 Mass. 104, 206 N.E. 2d 666 (1965) recognizing the right of the State to regulate the use of coastal wetlands. See also MacGibbon v. Board of Appeals of Duxbury (1970).

(12) Thurber v. Martin, 68 Mass. (2 gray) 394 (1854) provides guidelines to help determine what is a reasonable or unreasonable nature of the obstruction of a watercourse. Other cases relating to dams and mill operation include: Barre H. v. Parsons, 65 Mass.

367 (1852); Gould v. Boston Duck Co. 79 Mass. 442 (1859); Mason v. Whitney, 193 Mass. 152, 78 N.E. 881 (1906); and French v. Braintree Mfg. Co. 40 Mass. (23 pick) 216, cited in notes, 14 L.R.A. 488, 18 L.R.A. 537.

A U.S. Supreme Court decision affecting Massachusetts was that of State of Connecticut v. Commonwealth of Massachusetts, 282 U.S. 660 (1930). The Metropolitan District Commission provides Metropolitan Boston and other areas with water, over 60 percent of which is diverted from the Connecticut River Basin. The diversion of the Ware and Swift Rivers was authorized by the Secretary of War (Act of March 3, 1899 ss. 10, 30 Stat. 1151) after hearing arguments from both the Commonwealth and Connecticut, the lower riparian. The diversion of flood waters was permitted when flows in the Ware River exceeded 85 mgd, and only during the period between October 15 and June 15. The ruling allowed the diversion of the entire Swift River; except that flows from the Quabbin Dam would have to be passed to the Swift River as follows: at all times not less than 20 mgd; when the flow of the Connecticut River at Sunderland was less than 4650 cfs, 71 mgd must be passed and when the Connecticut flow was between 4650 cfs and 4900 cfs, 45 mgd would have to be passed.

The State of Connecticut brought suit against the Commonwealth contesting the diversion as a riparian. The Supreme Court ruled that the Masters findings summarized below were sustained and adopted them as its findings:

1. These diversions affect 2.93% of the watershed above Connecticut and diminish flows by 2%. However, 94% of this loss occurs when the Hartford gauge is above 3.5 feet. At this level, navigation depths are sufficient. The maximum diversions are at high water and lessen depths 5 or 6 inches. At median stages, the diversion is less, and at very low stages the flow is increased. The diversion will not perceptibly or materially interfere with navigation.

2. Loss of flood waters to agricultural land will have advantages and disadvantages. Any damage to hayland cannot be demonstrated by the evidence to be of any magnitude.

3. No present use of water for power production will be disturbed.

4. No injury to the shad run or perceptible increase to pollution can be proven.

5. Substitute plans proposed by Connecticut for the provision of water to Boston were inadequate, uncertain, inferior or not feasible.

The court based its findings on the following grounds:

"The governing rule is that this Court will not exert its extraordinary power to control the conduct of one State at the suit of another, unless the threatened invasion of right is of serious magnitude and established by clear and convincing evidence." N.Y. v. N.J. 256 U.S. 296, 309; Mo. v. Ill. 200 U.S. 466, 521.

"The burden on Connecticut to sustain the allegations on which it seeks to prevent Massachusetts from making the proposed diversion is much greater than that generally required to be borne by one seeking an injunction in a suit between private parties." N.D. v. Minn. 263, U.S. 365, 375. "There has been brought forward no adequate reason for disturbing the Master's findings of fact. They are amply sustained by the evidence and are adopted by the court."

The "laws in respect to riparian right that happen to be effective for the time being in both States do not constitute a dependable guide or just basis for the decision of controversies such as that here presented...every State is free to change its laws governing riparian ownership of flowing waters for such purposes as it may deem wise." U.S. v. Rio Grand Irrigation Co. 174 U.S. 690, 702.

"For the decision of suits between States, Federal, State and international law are considered and applied by this court as the exigencies of the particular case may require."

Attorney General's opinions of special importance. The following opinions represent all the more recent pertinent determinations of the Attorney General's office.

(1) Division of Waterways; Reconstruction of privately owned dams not authorized. (Letter, Attorney General, Jan. 20, 1960).

"The question propounded by your inquiry is whether or not your department has the authority to reconstruct a privately owned dam which operates for profit and as an incident thereto furnishes water to one or more municipalities. The answer is negative."

"The provisions of (Chapter 91) section 11 and 31 clearly indicate that one of the essential requirements for construction or work under the provisions of these sections is public ownership; and the language of both sections vests the department with the right of eminent domain to accomplish such ownership."

(2) His Excellency Christian A. Herter, Governor; Constitutionality of zoning enabling act. (Letter, Attorney General, April 30, 1954).

"Of course, reasonable zoning laws are an exercise of the police power."

"The bill appears to be in proper form, and if enacted into law would, in my opinion, be constitutional."

(3) Department of Correction; Right of Commonwealth to build a dam and flow water on land of another. (Letter, Attorney General, August 21, 1928).

"Briefly summarized, a riparian owner has the right to reasonable use of water as it passes through his land, having due regard to the correlative rights of other riparian owners above and below."

"An answer to your second question must depend upon the extent to which lands of upper riparian owners are overflowed during the ice cutting season. Small and trivial flowage of such lands would be regarded as injuries not meriting compensation..."

(4) Department of Public Works; Property rights, and rights to fill, of the City of New Bedford, as to certain lands in the tide waters. (Letter, Attorney General, April 23, 1962).

While this case concerns a statutory exception to the general laws governing the public status of tide lands, the opinion contains this clear description of the usual rule: "Save for statutes such as the 1806 act, proprietors of adjoining uplands own only the land between high and low water mark which does not extend more than 100 rods from the high water mark, and that ownership is with a reservation of certain rights in the public." Colonial Ordinance, "The waters and the land under them...are held by the State, both as owner of the fee and as the responsitory (sic) of sovereign power, with a perfect right of control in the interest of the public." Michaelson v. Silver Beach Improvement Assoc. Inc., 1961 A.S. 453, 455.

(5) Division of Motorboats; Regulations of Motorboats by Local Commissions. (Letter, Attorney General, Jan. 19, 1962). Chapter 275 of the Acts of 1960... displays on its face an intent to supersede local and special laws and to repeal inconsistent special statutes.

"I am, therefore, constrained to rule that the Lake Boone Commission is presently without power to promulgate and enforce rules and regulations which are in any way inconsistent with the provisions of c. 275 or rules and regulations of the director issued under authority thereof."

(6) Water Resources Commission; Rights in Tideland below high water mark. (Letter, Attorney General, Jan. 11, 1963).

"The answers...are that in Massachusetts, owners of land on the shore of the sea have title, subject to the public rights of navigation, fishing and fowling, to low water mark or where the tide ebbs more than that distance to one hundred rods from high water mark, that private interests in the public lands can be... created...by the legislature, and that the owners of interests in lands, in tidewaters between high water mark and low water mark, or having grants from the Commonwealth of interests in public lands in tidewaters, which are taken by eminent domain by the Commonwealth have a right to recover damages..."

(7) Department of Public Works; Private Tidal Flats Appropriated for Navigational Improvements (Letter, Attorney General, Dec. 21, 1964).

"It is my opinion that the holder of private tidal flats in Massachusetts is not entitled to damages when said flats are appropriated by the Commonwealth for public use to improve Navigational facilities".

(8) Water Resources Commission; Under a statute creating the Thames River Valley Flood Control Commission is there a reimbursable tax loss if a building to be taken is moved to another municipality. (Letter, Attorney General, Oct. 30, 1964).

"The terms of the Thames River Valley Flood Control Compact states that Connecticut will reimburse Massachusetts a percentage "of the amount of taxes lost" as a result of the project."

"Nowhere in the compact is a situation contemplated or provided for in which one town might lose a building which another town might gain. Therefore...the intent of the compact in this regard was to compensate forty per cent of the taxable losses resulting to the municipalities in the flood control district."

"The principal purposes of this compact are: a) to promote interstate comity among and between the signatory states, b) to assure adequate storage capacity for impounding waters of the Thames River and its tributaries for the protection of life and property from floods."

"The reimbursement for actual tax loss to a Massachusetts town is, in my opinion, very much a part of the scheme as stated in article I."

(9) Lake Quinsigamond Commission. Regarding the Authority to Regulate the Filling of Lake Quinsigamond. (Letter, Attorney General, Jan. 14, 1966).

"It is my opinion...that the Commission's authority to regulate the filling of Lake Quinsigamond must be shared with the

Department of Public Works and the Department of Natural Resources in accordance with the provisions of c. 220 of the Acts of 1965."

(10) Water Resources Commission. Status of United States Letter of Credit guaranteeing payment for flood water structures questioned by Comptroller, (Letter, Attorney General, June 3, 1966).

"If a letter of credit which the government proposes to deposit with the treasurer incorporates an unconditional pledge of credit of the United States to the amount indicated therein, I see no reason why it should be treated differently from currency or other accepted obligations of the United States government."

(11) Water Resources Commission. Taking of land to Provide a Location for a Utility Line Displaced by a works of improvement project. (Letter, Attorney General, March 26, 1964).

"It appears clear that Chapter 565 of the Acts of 1962 and the Assurances given to the U.S. Army Corps of Engineers...give the Commonwealth the authority to acquire all lands and easements necessary to carry out the project...there appears nothing authorizing the Commonwealth to exercise its right of eminent domain to purchase land or easements for the purpose of relocating the transmission lines displaced."

(12) Metropolitan District Commission. Approval of Sewerage Projects planned by said Commission. (Letter, Attorney General, Feb. 16, 1967).

Stated in effect that sewerage project plans must be approved by the Division of Water Pollution Control as well as the Department of Public Health.

(13) Division of Sanitary Engineering, Department of Public Health. Control and jurisdiction over water supplies. (Letter, Attorney General, Sept. 5, 1967).

Stated in effect that the Department of Public Health retained control and jurisdiction over water supplies.

WATER RIGHTS

Doctrine. In Massachusetts, the riparian doctrine is the fundamental rule of water law. This doctrine has not been materially clarified by the passage of statutes, but rather has been interpreted by the judicial process. The doctrine holds that the owner of land on a watercourse has, as an inseparable incident of his ownership of that land, the right to the

reasonable use of water.

Litigation between riparian owners has built a body of case law seeking to determine whether a use is, or is not, reasonable. Prescriptive rights can, however, be gained by accepted continuous use for twenty years.

In contrast to the riparian doctrine, with its emphasis on an individual's ownership of property, the early Colonial Ordinances reserved to public use the major natural ponds of the Commonwealth and certain navigable waters and tidelands. The rights to great ponds and tidal areas are well defined and utilized, while the status of navigable waters is more obscure.

The Mill Acts can be considered to mark the emergence of the doctrine of governmental endorsement of water resource development for the public good. This enabling legislation greatly facilitated the private construction of dams necessary for the Commonwealth's participation in the Industrial Revolution. This critical need for greatly expanded water power sources has several more recent parallels in water resource needs.

The expanding demands on our water resources made by an increasing population were recognized in the Constitutional Convention of 1919. Article XLIX granted the general court the power to enact legislation expedient for the conservation of water resources. Subsequent legislation has provided for the general overview of water resources by a single coordinating agency, the Massachusetts Water Resources Commission.

Surface Water. Private and public property in water (riparian rights and public rights as interpreted by Massachusetts Courts or established by the Colonial Ordinances) has been elucidated as follows.

"Diffused surface water" is water which is not confined to a channel. It includes rain water, melted snow and water held in wetlands. In general, such water may be captured and treated as a propriety feature of the land. Water confined to a channel, flowing in an ascertainable direction and having some permanency of source is said to constitute a "watercourse".

In Massachusetts, the riparian doctrine grants propriety interests to an owner of land on a watercourse, and within limits, rights on natural ponds to the littoral owners. Riparian rights are assumed to be included in the transfer of title of land bordering a watercourse, but such rights can be withheld, or conveyed separately.

The riparian owner holds the right to use a stream and its waters in any reasonable manner which is lawful, beneficial and not inconsistent with the reasonable use of other riparians. Since no lawful

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purpose is unreasonable per se, and since no lawful use is preferred over another, the question involved is whether the means used to gain a purpose are reasonable.

The question of the effect on other riparian owners weighs heavily in the test of reasonableness. Other factors which are considered include the use of adjacent land, public policy, and the likelihood that technological advances may rectify the objectionable features of a use.

While the test of reasonableness cannot be precisely defined, the findings of previously decided cases may be used to gain an impression of what have been considered to be reasonable or unreasonable uses in particular situations. In addition to the proof of the existence of an unreasonable use, an aggrieved riparian owner must also demonstrate actual damage to his present or potential use of his property.

The riparian doctrine is based primarily on case law because of the necessity of judging values in terms of degrees rather than absolutes. Identical uses in different situations can be held in different lights by the court. An opinion by Chief Justice Shaw illustrates this point:

"To take a quantity of water from a large running stream for agricultural or manufacturing purposes would cause no sensible or perceptible diminution of the benefit, to the prejudice of a lower riparian, whereas, taking the same quantity from a small running brook passing through many farms would be of great and manifest injury to those below, who would need it for domestic supply or watering cattle..." (Elliot v. Fitchburg R.R., 64 Mass. (10 Cush) 191 (1852)).

In brief, one would conclude that litigation must judge first whether a use is reasonable and secondly whether such a use has a significantly damaging or unreasonable effect on other riparian owners. This rule of reason seemingly has resulted in contradictory decisions, but through them all run the essential threads of balancing uses against damage, and the sharing of the water resource by the various riparian owners.

Riparian rights do have some well-defined limitations. They may only be exercised within the watershed of the stream. They may be affected by the gaining of prescriptive rights through 20 years of adverse possession by another riparian. They are subject to the public's right to the use of navigable streams and great ponds. Nontidal rivers must also be kept open and free for the passage of migratory fish.

The securing of water supplies by municipalities has been accomplished by a fee taking of the water sources and appurtenant

riparian rights. Damages to lower riparians affected by takings for water supply purposes have been awarded. (Fosgate v. Town of Hudson, 178 Mass. 225, 59 N.E. 809 (1901)).

The structure of riparian case law is not sufficient to deal with all the many problems facing water resource planners and managers in Massachusetts. The Legislative Research Council, in Rights to Surface and Sub-surface Water in Massachusetts, refers to the need for further evaluation of factors "such as extent of investment and relative social desirability...In a prolonged water shortage there may well have to be established some order of preference among different types of uses on the basis of their relative value to society."

Groundwater. Groundwater has no statutory definition or well defined legal status in Massachusetts. Many of the cases dealing with the subject are old, and a narrow range of cases is available for reference. While classes of groundwater are not well categorized in State law a distinction is drawn between springs and percolating waters. In Town of Holliston v. Holliston Water Co., 306 Mass. 17, 27 N.E. 2nd 194 (1940), the court held that an authorization to take springs and streams did not cover the taking of property containing only percolating waters, although no difference in the legal status of the two classes of groundwater has evolved.

In general, groundwater, while not property, is considered to be an intrinsic part of the land itself, just as the rock or stones within it. An owner may draw large quantities of water from his property even though this water would, by natural percolation, enter his neighbors' land. By the same token, the owner of land can, by mechanical obstruction, seek to exclude percolating ground waters from his property. In brief, actions taken on one's own property even though they may affect ground water in adjacent property are not unlawful (Gallerani v. U.S., 41 F. Supp. 293 (1941)). One may not however, cause the land of another to subside by the excessive withdrawal of water from adjacent property (Gaines v. Town of Milton, 346 Mass. 617 (1964)).

One can assume that this has evolved as the only practical approach to the problem. In the words of the court:

"It is impossible to know in what direction percolating water finds its way into a well...Its ways of approach, and its amount, vary with the operation of obscure natural causes not controlled by the owner of the land through which it passes. If the grant... were held to impose an obligation upon all the land from which the well might derive supplies, the burden would be very indefinite, uncertain, and shifting, and tend to prevent, without offsetting benefit, the improvement of the land as with buildings or its use for mining, etc. It would be contrary to the public good..."

(Davis v. Spaulding, 157 Mass. 43., 32 N.E. 650 (1892)).

The discharge of sewage into the ground is regulated by the Massachusetts Department of Public Health under Article XI of the State Sanitary Code. (Authorized by GL c. 111, ss. 5 & 127A.) While it does not specifically refer to the pollution of ground water, the code does forbid the direct discharge of sewage into ground water. Certain minimum percolation distances are required above the water table and distances to water supplies are controlled.

No broad groundwater pollution control powers or programs have been specifically authorized, since the problem has thus far occurred on a localized basis. It is an undecided question in Massachusetts as to whether the Department of Public Health or the Division of Water Pollution Control of the Water Resources Commission has the primary responsibility in protecting ground water resources.

Legislation relating to ground water includes the following:

The enabling legislation setting up the Water Resources Commission and Division of Water Resources and authorizing its interest in "underground...water supplies." It authorizes the establishment of rules and regulations governing well drillers, and requires their registration and filing of certain reports. (GL c. 21, ss. 8-16).

The law making it a felony to willfully poison any spring, well or reservoir with intent to kill or injure (GL c. 265, ss. 28).

Access to lakes and streams. The Colonial Ordinance of 1941-47 reserved to the people of Massachusetts the right to fish and to obtain fowl on the waters of ponds containing over ten acres in their natural state. These specific uses have been extended by interpretation to include any use to which the water is capable of being put, although the ordinance was later modified to restrict the right to fish to those ponds over twenty acres.

Although rivers and streams above the ebb and flow of the tides are not navigable in law, they may be navigable in fact. An easement can be acquired affording the public a right to use a stream for passage in boats, or other craft, or on the frozen surface of the water, for the purposes of business, convenience or pleasure. Leading cases on this subject include Comm. v. Alger, 61 Mass. 97 (1851); Comm. v. Chapin, 22 Mass. 199, 202 (1827); Brosnan v. Gage, 240 Mass. 113, 118 (1921).

The right to trespass on unimproved land to reach "great ponds" did not prove to be a sufficient guarantee of public access, nor did

a cumbersome public petition procedure involving access construction by counties fulfill the needs of the public, as private development increasingly usurped the shorelines of most lakes. The Public Access Board, created in 1962, was authorized to construct boat ramps and parking areas using funds allocated from gasoline taxes. The Board, with eminent domain powers, has obtained sites and constructed boating access facilities on inland and coastal waters.

Public access sites and facilities have also been provided by the Massachusetts Division of Forests and Parks, the Massachusetts Division of Fisheries and Game, the Department of Public Works, the Metropolitan District Commission, the various counties, cities and towns, the Department of the Interior and the Corps of Engineers. The dominant agency in the boating access program is, however, the Public Access Board, in the Department of Natural Resources, as authorized by GL c. 21, ss. 17 and 17A. From 1963 to 1968, 45 facilities have been constructed by this agency. Stream-bank acquisition by lease or purchase for use as public fishing grounds has been a feature of the program of the Fisheries and Game Division, although much stream frontage has been, and will be, acquired by the Division of Forests and Parks. Wetland purchases of significant magnitude have been made by the U.S. Bureau of Sports Fisheries and Wildlife of the Department of the Interior. The Department of Natural Resources will undoubtedly be involved in a massive program of wetland preservation as a result of the coastal and inland wetland acts (GL c. 130, s. 105, and GL c. 131, s. 40A). It is reasonable to believe that increased access to this type of water resource may result from this program.

Private boat launching and parking facilities are available - often on a user fee basis. Private development is important since many thousands of acres of impounded waters do not fall under the public access laws. Public use of most private stream areas and many of the private impounded waters is tolerated by riparian owners, or owners of water rights. The public can be legally prosecuted for simple trespass on such private areas only if statutes concerning the giving of notice or posting of such lands or waters are complied with by the owners. (GL c. 266, s. 120, and GL c. 131, s. 36). In most rural areas access in fact, if not in law, is provided. Cooperation of landowners and recreationists is urged by State resource agencies, and in some cases, use agreements have negotiated with riparian owners.

Diversion between basins. There is no specific statutory regulation of water diversion, although the "Hatch Act" (GL c. 131, s. 40) does control the alteration of stream banks. Case law prevails in water diversion disputes, except of course, where special acts of the legislature have authorized specific diversions. Within limits, riparian owners in Massachusetts can

expect to receive the natural flow of a stream. Certain reasonable uses, by way of incorporating water into a product, may permanently remove limited amounts of water from a watercourse with a degree of impunity; thus the use of water for agricultural purposes was considered legal in Weston v. Alden, 8 Mass. 136 (1811). However, the courts later held against riparians who diverted all or most of the water of streams for the purpose of irrigation, thereby consuming water and preventing lower riparians from operating their mills. Other cases were based on the relative amount of water removed in comparison to the amount returned to the stream.

In the preceding cases, the problem dealt primarily with the consumptive use of water within the watershed, and the test of reasonable use was widely applied. In Elliot v. Fitchburg R.R. Co., 64 Mass. (19 Cush.) 191 (1852), water was removed and consumed outside of the watershed by locomotives. The court again held that a determination of reasonable use and actual damage to a lower riparian were the issues, without discussing the place of use. The court favored this non-riparian use by stating: "We think it was properly left to the jury to find whether the defendants...had by their diversion of water for a valuable and highly beneficial use, caused any actual or perceptible damage, and if not, to find for the defendants,".

In Stratton v. Mount Hermon Boy's School, 216 Mass. 83, 103 N.E. 87, 49 L.R.A. (N.S.) 57 (1913), the court held that the privilege of reasonable use could be exercised only within the watershed, stating:

"A brook or river, so far as concerns surface indications, is inseparably connected with its watershed and owes the volume of current to its area. A definite and fixed channel is part of the conception of a watercourse. To divert a substantial portion of its flow is the creation of a new and different channel, which to that extent defeats the reasonable and natural expectations of the owners lower down on the old channel (and) increases (the flow) which drains the watershed into which the diversion is made, and may injure thereby riparian rights upon it."

It is not altogether clear whether the restriction to the watershed rule, or a determination of reasonableness, will prevail in future cases. The situation is best summed up in Water Law: Stream flow Rights in New England and New York State, James Kendall, 1967, which states:

"Thus, it appears that in Massachusetts cases of irrigation, the court will consider the reasonable use upstream relative to the reasonable use downstream. In those cases of permanent diversion, however, reasonableness does not appear to be a factor, despite the language of the courts. While the authorities

or legal writers may state or imply that diversion of water for sale might come within the reasonable use doctrine, or that a diversion of merely a portion of the stream for other uses might be deemed reasonable, the cases do not seem to bear this out. On the contrary, only those diversions for riparian uses in which a portion of the water may be returned to the stream, or for domestic uses or minor manufacturing, appear to be within the reasonable use doctrine. All other cases, those of permanent diversion, seem to be actionable so long as there is actual injury to the lower riparian estate."

For a discussion of diversions affecting another state see "Case Law," page five, Conn. v. Mass. 282, U.S. 789.

Eminent Domain. The statutes relating to the exercise of the power of the State and its subdivisions to take land is contained in Chapter 79 of the General Laws. Specific references to the exercise of these powers by some individual agencies for certain purposes are contained in several other Chapters, and are also granted by special acts of the legislature. Agencies authorized eminent domain powers by statute in the water resources field include:

The Water Resources Commission, to implement pollution abatement programs by providing storage sites for low flow augmentation. Early acquisition of future reservoir sites for water supply, flood control, or flow augmentation may be taken if approval is granted by the governor and the municipal officers where the reservoir would be located.

The Commissioner of the Department of Natural Resources with the consent of the board, Governor and Council, and the board of selectmen in any town, to acquire lands and waters for State parks, forests, recreation areas and reservations.

The Commissioner of the Department of Natural Resources, under special procedures set up to provide protection to coastal and inland wetlands.

The Public Access Board, to provide access to coastal and inland waters.

The State Reclamation Board with Town approval and reclamation districts, to make improvements to lowlands.

The Department of Public Works with the approval of the Governor and Council, for improvements to waterways.

Cities, towns, and counties, for conservation purposes.

Cities, towns, and the Metropolitan District, to provide

water and sewerage services.

City councils, town selectmen or water commissioners, water commissioners of water supply and fire and water districts, officers having control of county institutions having waterworks, heads of all State departments having waterworks, and water companies serving communities, to provide water supplies in emergencies.

Cities and towns (except Boston), for any municipal purpose if authorized by vote of the city council or town meeting - this would include beaches.

Coastal towns or counties, to provide landing places on tidal waters.

Towns, to provide passage of anadromous fish.

Water companies having franchise rights covering an entire city, town or district, with the consent of the Department of Public Health, to provide water supplies.

Under special acts of the legislature other agencies in the water resources field have in some instances, been granted eminent domain powers including:

The Water Resources Commission, to provide sites for works of improvement under the Federal Watershed Protection and Flood Prevention Act, and to provide sites for certain Corps of Engineers projects.

The Division of Fisheries and Game, for fish and wildlife management purposes.

REGULATORY AUTHORITY

Permits or Approvals Required.

(1) For drilling wells. Under the statutory authority of the Water Resources Commission, any person engaged in the business of digging or drilling wells must be registered with the Commission. Within thirty days after completion of any well by digging or drilling, a registered well digger or driller shall submit a report to the Commissioner setting forth such information as may be required under the rules and regulations established by said Commission.

(2) For building dams. Dams over ten feet in height, or those with over one square mile of watershed, or those impounding over one million gallons of water must be approved by the Commissioner of Public Works.

The Department of Public Works, under Chapter 91, may license or prescribe the terms of construction or extension of a dam, road, bridge, or other structure or the filling of land on the Connecticut and parts of the Westfield River, the non-tidal portion of the Merrimack River, or on any stream on which Federal, State or municipal funds have been used for any form of flood control work.

The Department of Public Works also may license wharves, piers, walls, road, bridges, structures, pilings, or the filling of great ponds and tidewaters.

Under Chapter 131, Section 48, ponds (with some exceptions) may not be drained unless the Director of the Division of Fisheries and Game is given ten days prior notice. In the case of a great pond, the Department of Natural Resources must be notified as provided in Chapter 91, Section 19A.

(3) Channel encroachments. The Department of Public Works, as noted in the previous section, regulates the filling or the placing of structures in many of the larger streams, great ponds, and tidal waters. The following two sections contain other State powers in reference to flood plains, which also could relate to channel encroachment.

(4) Development in flood plains. Legislation protecting flood plains is contained in Chapter 131, sections 40 and 40A.* Under section 40, any person wishing to fill or dredge any bank, flat, marsh, meadow or swamp bordering inland waters must file a written letter of intention with the Town Selectmen or Mayor, the State Department of Public Works and the State Department of Natural Rsources. Local officials must hold a hearing and transmit local recommendations to the Commissioner of Natural Resources. The State Department of Public Works considers the application from the standpoint of its obligations and authority under Chapter 91, and the Department of Natural Resources determines if the area involved is essential to public or private water supply or to proper flood control. The Commissioner may, by written order, impose such conditions as may be necessary to protect the aforementioned interests.

Section 40A further implements the protection of inland wetlands by granting the Commissioner of Natural Resources the power to adopt, amend, or repeal orders regulating, restricting, or prohibiting dredging, filling, removing or otherwise altering or polluting certain inland wetlands. Provisions concerning notice, hearing, exceptions, objections and appeal are included, as well

*Roughly similar legislation protects coastal wetlands.

as provision for the taking of such land or interest therein by eminent domain.

Municipalities have, in some cases, adopted flood plain zoning ordinances under the authority of Chapter 40A, Section 2.

(5) Discharge of wastes. The Massachusetts Clean Waters Act of 1966 established the Division of Water Pollution Control under the Water Resources Commission and authorized it to establish a program for the prevention, control, and abatement of water pollution. The act further provided that no new outlet or disposal system may be installed without first obtaining a permit, which the Director of the Division of Water Pollution Control is authorized to issue (GL c. 21, ss. 26-50). Permits must also be obtained from this agency in order to dispose of waste oil.

Subsurface disposal of wastes is controlled by the Massachusetts Department of Public Health under authority of Chapter 111. Individual household and other small systems are usually issued permits by local health authorities under authority delegated by the State agency.

Less sweeping roles in pollution prevention or abatement are played by municipalities (Chapter 40, 83). The Department of Public Works (Chapter 91), the Metropolitan District Commission (Chapter 92), the Department of Public Safety (Chapter 270), the Division of Marine Fisheries (Chapter 130), and the Division of Fisheries and Game (Chapter 131).

(6) Public water supply. The Massachusetts Department of Public Health under Chapter 111, is the agency responsible for maintaining water standards for drinking purposes and swimming. Recreational use permits on public water supplies are handled by local water boards and the Metropolitan District Commission, under powers delegated by the State agency.

(7) Miscellaneous. Permits from the Division of Fisheries and Game are necessary before fish are stocked, or maintained for the purpose of propagation.

Water quality.

(1) Waste treatment. See Permits or Approvals Required - Discharge of Wastes, supra.

(2) Flow regulation. The Commonwealth of Massachusetts has not implemented an overall program of flow regulation. The Massachusetts Clean Waters Act does authorize the Division of Water Pollution Control to construct reservoir sites for low flow augmentation to abate pollution (see: Water Rights - Eminent Domain, supra). Special Acts which created the Quabbin

Reservoir and Ware River diversion set up certain minimum flow standards which affect the Chicopee River drainage and the Connecticut River. Other special acts limit water users to certain periods of the year or to the use of flows above a certain minimum on other streams, but no general plan is in existence for the State.

II - ADMINISTRATIVE STRUCTURE*

INTERSTATE

River Valley Flood Control Commissions.

Connecticut River Valley Flood Control Commission. The Commission was established as a result of an interstate compact approved by the States of Connecticut, Massachusetts, New Hampshire, and Vermont on September 8, 1953. The compact was formulated to facilitate the construction of reservoirs and dams on tributary streams of the Connecticut River for flood control. The principal purposes of the compact are "(a) to promote interstate comity among and between the signatory states; (b) to assure adequate storage capacity for impounding the waters of the Connecticut River and its tributaries for the protection of life and property from floods; (c) to provide a joint or common agency through which the signatory states, while promoting, protecting and preserving to each the local interest and sovereignty of the respective signatory states, may more effectively cooperate in accomplishing the object of flood control and water resources utilization in the basin of the Connecticut River and its tributaries." The compact was established with the assumption that a comprehensive flood control system should include dams and reservoirs to control flood run-off from approximately twenty-five percent of the total drainage above Hartford, Connecticut. The compact provides an interstate agreement for the construction of flood control dams and reservoirs at Barre Falls (Ware River) in Massachusetts; West Townshend (West River), Ball Mountain (West River), North Hartland (Ottauquechee River), Groton Pond (Wells River), Victory (Moose River), Bloomfield (Nulhegan River) in Vermont; and at South Keene (Otter Brook), Walpole (Cold River), Bethlehem Junction (Ammonoosuc River), Franconia (Ammonoosuc River) and Swiftwater (Wild Ammonoosuc River) in New Hampshire. The compact also provides that Connecticut and Massachusetts will refund ninety percent of taxes lost by the upstream states as a result of the flood control program, and establishes the Commission as the working agency to carry out the provisions of the compact. The Commission, composed of three members of each of the signatory states, has operated as an advisory and coordinating agency to facilitate the construction of proposed flood control projects in the river basin. As a result of the comprehensive Type II study, the role of the Commission in this respect will be an increasingly important one.

Other Flood Control Commissions. The Merrimack River Valley

*Much of this section was excerpted from the Report on Water Resources Management. See Bibliography.

Flood Control Commission and the Thames River Valley Flood Control Commission were created in 1956 and 1957, respectively. Their functions are generally similar to those of the Connecticut River Valley Flood Control Commission, discussed immediately above.

Atlantic States Marine Fisheries Commission. This interstate compact was formed pursuant to Public Law 77-539, (1942).

The Commission is a fact finding and deliberative body with the power to make recommendations to the member states and the U.S. Congress concerning the better utilization of marine, shell, and anadromous fisheries. Each member state is authorized to appoint three representatives to the Commission: One from the state administrative agency concerned with fishery resources; one member of the legislature; and one public member appointed by the governor.

The Commission is divided into four sections as follows:

North Atlantic Section - Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut.

Middle Atlantic Section - New York, New Jersey, Pennsylvania, Delaware.

Chesapeake Bay Section - Maryland, Virginia.

South Atlantic Section - North Carolina, South Carolina, Georgia, Florida.
In addition, Vermont and Pennsylvania are signatory states whose primary concern is the better utilization of their anadromous fisheries.

The Commission has the power to recommend the coordination of the exercise of the various states police powers to promote the preservation and protection of fisheries; to recommend legislation concerning the conservation of Atlantic coast marine, shell and anadromous fisheries; to consult with administrative agencies of participating states and recommend regulations dealing with the fisheries; and to recommend to participating states fish stocking proposals and projects.

The commission is supported by financial assessments levied against each member state, based generally on the primary market value of their fishery products, exclusive of cod and haddock. The organization is required to submit an annual report to Congress each year, which sets forth the activities of the Commission.

Public Law 81-721, amending the formative legislation,

authorized the Commission to act as a joint regulatory agency with powers conferred by the states to regulate fishing operations of specific fisheries in which the states have a common interest. Although ratified by Massachusetts, this amendment has not been utilized to the present time.

New England Interstate Water Pollution Control Compact. The New England Interstate Water Pollution Control Commission (NEIWPCC) was established by an interstate compact adopted by the Commonwealth of Massachusetts and the States of Connecticut, Rhode Island, New York, Vermont, New Hampshire, and Maine between 1947 and 1955. The area of jurisdiction of the Commission includes all interstate waters of signatory states and tidal waters ebbing and flowing past the boundaries of any two signatory states. The waters under the jurisdiction of the Interstate Sanitation Commission (New York, New Jersey, and Connecticut) are excluded.

The Commission consists of five commissioners from each signatory state. The purpose of the Commission includes the establishment of water quality standards for various classifications of use in the water bodies under its jurisdiction, and to formulate programs to meet established standards. In accomplishing its purpose, the Commission is acting as an action agency with abatement and control of pollution its primary function. The Commission works very closely with the pollution control agencies of each of its member states in carrying out its purpose. Any comprehensive planning function would be undertaken by the New England River Basins Commission with the NEIWPCC advising on matters concerning the quality of water.

At the present time the Commission is carrying out various programs in relation to its function of pollution abatement and control including:

(1) Research programs pertaining to methods of treatment.

(2) Standards (criteria) Development for various uses of water bodies as a continuous program.

(3) Training of existing sewage treatment plant operators.

(4) Public information and education.

(5) Coordination of interstate water pollution control activities.

(6) Studies of specific problems which are of significant concern to the area as a whole. For example, pollution from small boats.

In order to further alleviate water pollution of the interstate waters, the Commission hopes to add to its present programs by undertaking the following:

(1) Obtain the powers of enforcement of standards where, in interstate waters, individual states are unable to gain compliance. These enforcement powers would be with the approval of the states involved.

(2) Conduct a training program for new operators to aid in filling the need for qualified persons presently unavailable for operating the many treatment facilities presently understaffed and additional facilities which will be constructed in the near future.

(3) Establish a continuing surveillance program on interstate waters to observe quality and aid in enforcing quality standards.

The Commission's major goal may be summed up as follows: to design and construct necessary major additions and improvements to the metropolitan water, sewerage, and flood control systems within the metropolitan area.

It is the Commission's objective to continue studies necessary to determine water and sewerage needs to meet future demand and to construct such improvements as are needed therefor.

Basic information collected by the Commission includes rainfall data (in watersheds which contribute to supply sources within the system); quality samples of water from reservoirs, aqueducts and pipelines; air temperatures; evaporation test results, consumption data; river flows (gaging by U.S.G.S.). Information is manually filed in the central office of the MDC with copies sent to interested agencies.

The MDC presently serves about 40 communities with sewerage, and 42 communities (including 10 outside its district) with water.

Because of its large service area, the even larger area of influence of its water resources and reservoirs (extending about 70 miles westward of Boston), and its experience and expertise in providing systems of such magnitude, the MDC is an extremely important "partner" in the planning and management of water resources in Massachusetts.

Commission on Interstate Cooperation. Legislation passed in 1937 established in the department of the Secretary of State, a thirteen member Commission whose duties include the formulation of proposals for cooperation between this Commonwealth and other states, and with the Federal government, and to organize and maintain facilities for accomplishing these purposes.

New England River Basins Commission. The New England River

Basins Commission (NERBC) is one of several such commissions that are authorized to be set up throughout the country under Title II of the Federal Water Resources Planning Act of 1965 (PL 89-80). The area under the jurisdiction of the Commission includes all of New England and the bordering parts of New York State with the exception of the Hudson River and Lake Champlain Areas.

The Commission, which was formally established late in 1967, is designated to serve as the principal agency for the coordination of Federal, State, interstate, local and non-governmental plans for the development of water and related land resources in its area. It is also charged with preparing and maintaining a comprehensive, coordinated, joint plan for development for its area.

All matters being undertaken by the Commission are decided by a consensus of its members. Membership includes a chairman appointed by the President of the United States, representatives of the member states (a vice chairman is elected by them), representatives of Federal agencies having substantial interest in the Commission's work, and representatives of interstate agencies whose jurisdiction extends to the waters of the area for which the Commission was created.

The first major project of the NERBC is participation in the completion of the on-going North Atlantic Regional Water Resources Study, which is a "framework" study of the needs and resources of water to the year 2020. The Commission is also participating in the Northeastern United States Water Supply Study and the Connecticut River Basin Comprehensive Study. All three of these studies are presently under the direction of the Corps of Engineers and are funded, for the most part, by the Federal government.

The Commission has programmed studies to be accomplished under their jurisdiction. These include:

(1) A comprehensive study for southeastern New England.

(2) A study of small dams in New England including aspects of resource value, safety, and measures needed to salvage existing dams.

(3) A study of flood plains including methods of applying zoning or other applicable controls, methods of acquiring land for public use, and other methods which would reduce future flood hazards.

(4) A project to promote coordination between electric power development and other resource and environmental values.

It is expected that in order to successfully complete the studies presently programmed, technical assistance will be required from many of the Federal agencies which are involved in water resources. Input from various State agencies will also be necessary to achieve the objective of a comprehensive coordinated joint plan.

The New England River Basins Commission has, by resolution, assented to the Water Resources Council that future multipurpose water and land resources investigations within its area should be carried out with the Commission serving as the leading and coordinating agency, with Federal agencies carrying out specific study elements in accordance with an overall plan of study.

It will be necessary for the Commission to overcome several administrative and budgeting problems to assert itself successfully as the principal agency in water resources planning. Such items as Federal provision of coordinated budgets and the elimination of legislation assigning certain studies to individual Federal agencies will be necessary to effectively place the coordination of all water resources studies in the hands of this one agency, the New England River Basins Commission.

New England Regional Commission. This agency functions as a cooperative Federal and State partnership primarily concerned with economic and social development of the six-state New England Region. Established under the provisions of Title V of the Public Works and Economic Development Act of 1965 (79 Stat. 552; 42 U.S.C. Sec 3121), the Commission is composed of the New England Governors and a Federal Cochairman appointed by the President. The statute empowers the Commission to undertake regional and technical assistance including planning and demonstration projects directed toward improving the conservation and utilization of human and natural resources. The Federal Cochairman, upon recommendation of the Commission, may furnish supplementary funds to pursue programs that are otherwise qualified for assistance under the provisions of various Federal grant acts where, because of local economic conditions, the full local matching share requirement can not be met. Among the Federal grant acts that may be supplemented by the Commission are the Federal Water Pollution Control Act, Watershed and Protection and Flood Prevention Act, and the Land and Water Conservation Fund Act of 1965.

STATE DEPARTMENTS AND AGENCIES

Massachusetts Water Resources Commission.

(1) Division of Water Resources. The Division of Water

Resources was created by Chapter 620 of the Acts of 1956 within the Department of Natural Resources, but under the control of a special elevenmember Water Resources Commission. The Commissioner of the Department of Natural Resources is the chairman of the commission. Other members include representatives of the Department of Public Health, Public Works, Commerce and Development, the Division of Fisheries and Game, and four citizens appointed by the Governor.

The Division is charged with the following general responsibilities:

Coordinate all water and related land resource activities of State, interstate, and Federal agencies as they affect Massachusetts;

Guide the formulation of water resource policy and law based upon the interests of agriculture, industry, recreation, wildlife, conservation, domestic consumption, and flood protection;

Study the needs, supplies and resources of the Commonwealth with respect to water conservation and flood protection;

Supervise programs provided for by the Watershed Protection and Flood Prevention Act. (PL-566);

Contract for ground-water favorability studies upon local application;

Administer comprehensive water and land related resources planning program under the Water Resources Planning Act (PL 89-80), and to receive Federal funds under Title III of the Act; and

Administer a program of early acquisition of reservoir sites.

The above responsibilities have been translated into the following goals:

To develop scientific and equitable methods for the management of the State's water resources through coordination of basic data collection, establishment of effective planning, and formulation of necessary regulatory measures; and

To prepare and guide programs based upon planning recommendations to insure the optimum use, conservation, and development of State water and related land resources through the organization of cooperative State interagency, local-State and State-Federal partnership efforts.

The Division has proposed a number of objectives which define

the items to be included in a work program necessary to achieve these goals. These objectives were used for the most part as a starting point in developing the program presented in Chapter III, and therefore are not included herein.

The Division, as the coordination agency for water resources activities as they affect Massachusetts, is responsible for providing the State input and guidance required in many of the water resources programs of the Corps of Engineers, the Soil Conservation Service, the Geological Survey, and the Water Resources Council.

(2) Division of Water Pollution Control. The Division of Water Pollution Control was established in the Department of Natural Resources, under the control of the Water Resources Commission by Chapter 685 of the Acts of 1966. The Division is broadly responsible for improving the quality and value of the Commonwealth's water resources. The principal duties and responsibilities are contained in Chatper 687 of the Acts of 1966 and in the establishing act. These duties and responsibilities are:

Establish a program for the prevention, control, and abatement of water pollution and encourage the adoption and execution of this plan by users of the waters of the Commonwealth;

Study, research, and demonstrate new and improved methods of pollution abatement;

Adopt standards of water quality applicable to the waters of the Commonwealth and plan for the implementation and enforcement of the standards;

Examine periodically the water quality of the waters of the Commonwealth;

Propose water pollution abatement districts;

Cooperate with appropriate Federal agencies, agencies of other states and interstate agencies in matters related to water quality control, and shall receive and dispense funds from any such agency as may be available for the prevention, control and abatement of water pollution;

Regulate the construction and operation of new disposal systems for the discharge of sewage or industrial wastes or the effluent therefrom by the issuance of permits; and

Regulate, by order, the operation of water pollution control facilities to insure adequate treatment prior to discharge to any watercourse.

The Division has taken a sentence out of its establishing act as its goal, which is "To enhance the quality and value of water resources in the Commonwealth through a program for the prevention, control, and abatement of water pollution." The following specific objectives have been set forth to pursue this goal:

Encourage, and if necessary, require the adoption and execution of plans for abatement of 190 known sources of pollution by 1970 and 345 known sources by 1975;

Conduct research and demonstration programs in the areas of combined sewers, eutrophication, waste oil disposal, effects of the disposal of toxic wastes in the ground and at sea, advanced waste treatment, thermal pollution from watercraft, and the disposal of dry wastes through sanitary sewers;

Establish 36 monitoring stations by 1973;

Establish a technical school specializing in courses on the methods of water pollution control and the operation of water pollution abatement facilities;

Authorize and direct a total of 50 cities, towns, political subdivisions and water pollution abatement districts by 1970 (120 by 1975) to apply for Federal grants applicable to the capital outlay cost of pollution abatement facilities; and

Construct or enlarge reservoirs throughout the Commonwealth for the purpose of providing low flow augmentation by 1975.

The Division of Water Pollution Control works closely with the Federal Water Pollution Control Administration, particularly in regard to stream standards and enforcement on the interstate waters of the Commonwealth. These two agencies transfer information and data gathered, and the FWPCA provides technical assistance to the Division. Often working together in cooperative programs, these two agencies provide for the collection, analysis, and publication of water quality data on a continuing basis.

The Bureau of Environmental Health Engineering and the Division shares deep interest in the control and abatement of water pollution since contamination in many cases accompanies pollution. The sections of the water quality standards adopted by the Division and approved by the Department of Interior relating to public health were formulated with the approval of the Commissioner of Public Health. The two agencies have attempted to reduce the difficulty arising from the overlapping of functions by a mutually agreed upon schedule of operating procedures.

The Division has just oriented an extensive program of water

quality monitoring. Up to this time, the Division has provided a limited amount of first person data mostly in the form of grab sample analysis. The data presently available is stored on laboratory report sheets in the central office of the Division and is not generally published except in conjunction with a specific report. However, the Division continues to be a prime source of water pollution control information, particularly, in the form of engineering reports, special studies, enforcement proceedings, and permits. The primary functions of the Division at the moment are: to encourage and promote the development of water pollution abatement facilities, review and endorse applications for Federal grants and loans for pollution control projects (HUD), review and endorse reports, designs, and specifications for water pollution abatement facilities, monitor water quality in the waters of the Commonwealth, and administer the State construction grant program for water pollution abatement facilities.

The Division has not to date initiated a comprehensive planning program. The Division in the short time since being established has directed itself to the more pressing problems of classification and enforcement.

Massachusetts Department of Natural Resources.

(1) Division of Acquisition and Construction. The Division of Land Acquisition and Construction was departmentally organized recently to serve the other Divisions within the Department of Natural Resources by providing legal and engineering services in matters pertaining to the acquisition and disposition of lands, and to the development of recreational areas under the jurisdiction of the Department. In particular the Division performs the duties required to complete the land transactions, contracts for project design, reviews the plans and specifications, and acts as the contracting body for construction projects.

The Division of Land Acquisition and Construction uses data collected by other divisions of the Department of Natural Resources and by the Department of Public Health. This data includes water quality (for swimming purposes), runoff (for dams), depths and contours of ponds (for swimming), aquatic weed control, and insect pest control.

Acquisition and Construction, being a service division, is by its nature project oriented and does not in itself carry out any long range planning.

(2) Division of Conservation Services. The Division of Conservation Services was established within the Department of Natural Resources by Chapter 664 of the Acts of 1963. This act

abolished the State Soil Conservation Committee in the Department of Agriculture and added the Division of Conservation Services to the Department of Natural Resources.

The legislation also established a State Committee for the Conservation of Soil, Water and Related Resources in the Division. This committee is composed of seven voting members and one non-voting advisory member. The seven voting members include the Commissioner of Agriculture, Commissioner of Natural Resources, the Dean of the College of Agriculture at the University of Massachusetts, together with four appointed members suggested by the Massachusetts Association of Conservation Commissions, the Executive Committees of the State Grange and the Farm Bureau Federation, and the Association of Soil Conservation Districts. The State Conservationist of the United States Soil Conservation Service is the advisory member. The duties of the Committee are to encourage and assist educational work in the area of conservation, to advise the Director of the Division of Conservation Services in developing policies, and to promote the organization and operation of conservation districts.

The powers and duties, both statutory and delegated, of the Division of Conservation Services in the realm of water resources include:

Administer the State aid and assistance programs provided to serve the conservation districts (among other duties these conservation districts are empowered to develop comprehensive plans for conservation, development, and disposal of water, together with plans for the prevention of floodwater and sediment damages);

Administer the Self-Help Program which assists local conservation commissions by providing reimbursements of up to 50 percent of the cost of land acquisition for conservation and recreation purposes;

Administer and have overall responsibility for resource review of matters relating to the inland and coastal wetlands;

Coordination of the Bureau of Outdoor Recreation Land and Water Conservation Fund Program; and

Administer to the Public Access Board.

The Division has formulated three goals in order to guide it in carrying out its responsibility. One of the goals refers to its role in resources management and is stated as follows:

To conserve the renewable natural resources (soil, water, plant life, woodland, fish and wildlife, and outdoor recreation

resources) of the Commonwealth through the various programs and through cooperative efforts with all Federal, State, county, local public, and private resource agencies.

The following objectives, significantly related to the overall planning and management of water resources, have been developed to achieve the above goal:

Control detrimental alterations to non-restricted coastal marshlands and inland wetlands as specified respectively under Chapters 130 and 131 of the General Laws;

To place under restriction 40,000 acres of coastal marshes as determined by the findings of the Marine Fisheries Study of Coastal Wetlands;

To promote the development of small watershed projects featuring flood prevention and multi-purpose facilities; and

To control disbursement of monies from the Federal Land and Water Conservation Fund in accordance with the State Outdoor Recreation Plan.

In performing the duties heretofore noted, the Division works closely with the United States Soils Conservation Service, the Federal Bureau of Outdoor Recreation, and the Corps of Engineers. For projects of mutual interest, the Division exchanges information, opinions, and documentation with these Federal agencies.

The Division of Conservation Services maintains close ties with the Division of Water Resources and other State agencies concerned with mutual resources conservation and development, a number of the agencies are included within the Department of Natural Resources. The Division obtains data, information and opinions from these agencies and integrates these in reviewing inland and coastland wetlands development applications. Similar inputs are requested of the Department of Public Health, Bureau of Environmental Health Engineering, and the Department of Public Works, Division of Waterways in the areas of water supply and flood plain alteration, respectively.

The Division, at the present time, is embarking on an updating of the 1966 Outdoor Recreation Plan; this plan will be an input into any comprehensive water resources planning undertaken. It is not expected that the Division of Conservation Services will undertake water resources planning itself; however, because of its role in natural resource conservation and development, it is expected that the Division will contribute much to such comprehensive planning when undertaken by others. In addition the Division has administrative functions of local conservation districts that may develop comprehensive plans for water development

on a local basis. This planning should be coordinated with area-wide and Statewide water resources planning.

(3) Division of Fisheries and Game. The Division of Fisheries and Game was established under the General Laws Chapter 21, Section 7, within the Department of Natural Resources, but is supervised by a Fish and Game Board of five members, the members of which are appointed by the Governor. The duties of the Division are basically contained in the provisions of Chapter 131 of the General Laws.

The responsibilities of the Division of Fisheries and Game which significantly relate to water resources management and planning include:

Acquire fishing rights and privileges in water bodies including brooks, streams, and ponds other than great ponds;

Stock and restock applicable bodies of water; and

Manage the resources and environment of fish and wildlife including approximately 40,000 acres of land and water owned or controlled by the Division.

(4) Division of Forests and Parks. The Division of Forests and Parks was established within the Department of Natural Resources by the provisions of Section 8, Chapter 21 of the General Laws. The general duties and responsibilities are contained in Chapters 21, 61, and 132. The statutory duties directly related to water resources management and planning include:

Plan, acquire, design, and develop the State forests, parks and reservations under the jurisdiction of the Department;

Provide technical aid in natural resource planning for the Department together with Federal, regional and local planning or management agencies;

Provide year-round outdoor recreation opportunities on all its lands; and

Manage the forest and outdoor recreation aspects of the Department in connection with the Corps of Engineers and the U. S. Department of Agriculture flood control projects within the Commonwealth.

As can be noted from the above, the role of the Division in water resources planning and management is to assure the availability of water needed for forest management and recreational uses and flood protection on lands under the jurisdiction of the Department of Natural Resources.

In order to carry out its responsibilities as stated above, the Division of Forests and Parks has formulated the following goal: to improve the quality and quantity of experience of the out-of-doors through the provision of lands under the control of the Division by 1973.

The Division of Forests and Parks has set forth several objectives for carrying out the water resources aspects of this goal including the following:

To inventory and develop management plans including recommendations for policy with Division personnel for all lands under the control of the Division by 1973;

To develop a continuous planning process for all lands under the control of the Division by 1970 through technicians of the Bureau of Forest Department;

To continue cooperative resource planning with regional planning agencies and communities;

To develop a unit within the Department responsible for a major program of information and education by 1975; and

To reinventory the forest lands of Massachusetts in cooperation with the U. S. Forest Service by 1975.

Through cooperative programs the Division receives and exchanges technical assistance, data, and information with a number of Federal agencies including the U. S. Forest Service, the Geological Survey, the Weather Bureau, the Soil Conservation Service, and the Corps of Engineers. The Division supplies such data and information as rainfall records and water levels and receives data and information on weather forecasts, fire hazard classification, flood levels. Continual technical assistance on Forest Management Techniques is provided by the Forest Service.

The Division interchanges information with other State agencies and localities when mutual interests are involved (e.g., M.D.C. water reservoirs in State Parks).

The Division collects and maintains central office files such as levels of reservoirs, precipitation, and stream flow, all for specific projects. This information is manually retrieved when desired. In addition to information presently gathered, the Division intends to gather information on pond bottom contours, sedimentation rates, and water needs and methods of supplying water for forest management.

The Division has a large role in developing comprehensive

plans for recreation (Massachusetts Outdoor Recreation Plan), and in cooperating with regional planning groups. Because of the importance of "water" to its work, the Division works in close cooperation with the Division of Water Resources.

(5) Division of Marine Fisheries. The Division of Marine Fisheries was established under the provisions of Chapter 21 of the General Laws. The duties and responsibilities of the Division are generally contained in the establishing act together with Chapters 130 and 715. These duties include:

Preserve, protect, and manage the marine and anadromous fishery resources of the Commonwealth;

Cope with the problems involving pollution to marine life;

Prevent the physical alteration of estuarine wetlands; and

Secure and maintain statistical records of the catch of each species of marine fishery.

The Division of Marine Fisheries has formulated the following goal relating to water resources which guides it in carrying out its responsibility: to protect and enhance the marine environment.

The following objectives have been proposed to realize this goal:

To inventory and map coastal rivers and streams in reference to fishways, impoundments, barriers to fish passage, water use, and potential spawning grounds;

To inventory marine resources and the environment in selected estuaries and coastal bays throughout the Commonwealth at the rate of two to four areas per year, and to publish comprehensive reports together with the recommendations for the protection, enhancement and utilization of these resources; and

To investigate proposed coastal wetland alteration projects in order to protect marine fisheries by imposing restrictions on the work as required, and further, to preserve unaltered wetlands through the implementation of the Coastal Wetlands Protection Act.

The Division of Marine Fisheries receives research funds from the Department of Interior's Bureau of Commercial Fisheries under PL 88-309. Through research projects, the Division exchanges information on fish production and resources inventories.

To date the Division has published five reports on the marine resource inventories on certain coastal bays and estuaries of the Commonwealth. These inventories contain data on the type, status,

and value of the marine resources in the areas and data concerning the physical and chemical characteristics which affect the marine resources. Additional activities of the Division include: the issuance of licenses; maintenance of a lobster hatchery and research station on Martha's Vineyard; and operation of a shellfish purification plant.

The Division in its approach to its duties and responsibilities has directed itself into areas of specific marine inventorying and research geared to population dynamics. The information and data they have gathered would be invaluable to any water resources planning involving coastal waters.

(6) Division of Mineral Resources. This was established under the provision of Chapter 21, and its role is described in Section 54 as follows:

To administer laws, rules, and regulations relating to oil, gas, fossil fuels, sulphur, metals, ores, minerals, rock, soil, sand, and gravel, on or in coastal waters; and

With approval of the Commissioners of National Resources and Public Works, the Director of Mineral Resources may license mineral exploration, lease extraction rights, establish charges and fees, and adopt rules and regulations.

Massachusetts Department of Public Health.

(1) Bureau of Environmental Engineering. The Bureau of Environmental Health Engineering resulted from recent reorganization and expansion of the Division of Sanitary Engineering as authorized and approved by the Public Health Council. The Bureau consists of five functional divisions and one administrative support division. Each of the five functional divisions will oversee and regulate one aspect of environmental health engineering. These divisions are: (1) Division of Air Use Management and Radiological Health, (2) Division of General Environmental Control, (3) Division of Water Quality Evaluation, (4) Division of Land Use Management, and (5) Division of Laboratory Support Services. The Bureau will continue to staff and maintain four district offices which perform much of the field work and supply field information to the central office.

The principal powers and duties of the Bureau are included within the provisions of Chapter 111 of the Massachusetts General Laws, particularly Section 5. In addition, the Bureau has additional responsibilities delegated by Special Acts and other sections of the General Laws, including Chapters 40, 83, and 130.

Some of the principal duties of the Bureau are as follows:

Oversight of inland waters, including surface and subsurface

water, and sources of water supply, and control the pollution or contamination of any or all of the lakes, ponds, streams, tidal waters and flats within the commonwealth and of the tributaries of such tidal waters and flats;

Regulate the application of chemicals for weed and aquatic nuisance control by private individuals;

Control algae, weeds, and other aquatic nuisances in such lakes, ponds, streams, and other bodies of water within the Commonwealth;

Regulate any city, town or district water supply by requiring such treatment facilities as are needed to insure the delivery of a safe water supply to all consumers;

Advise communities or persons as to the most appropriate source of water supply and the best method of assuring its purity, and the best method of disposing of sewage or drainage;

Examine water from water supply systems to ascertain their purity and fitness for domestic use;

Regulate the discharge into coastal waters of sewage or other substances injurious to health;

Examine coastal waters and flats of the Commonwealth to determine whether these areas are contaminated;

Control and direct operations of all water resources for communities during disaster emergencies; and

Investigate the utilization of low lands and swamps by draining, for the protection of public health.

In order to carry out the responsibilities as stated above and, in general, to promote the public health the Bureau has formulated goals to guide future actions. One of the goals refers to its role in water resources management and is stated as follows: to promote the public health, safety, and convenience associated with water and related land uses by assuring plentiful supplies of safe and suitable water to be furnished for human consumption and related uses, to eliminate environmental health hazards associated with harvesting shellfish from contaminated water and contamination of bathing waters, and control of aquatic nuisance plants and organisms.

The Bureau has set forth several objectives for carrying out this goal. The most significant with respect to long-range water resources planning and management are:

To maintain a current inventory of basic engineering data for

each public water supply in the Commonwealth in a form useful for water supply system design, municipal and regional planning, and emergency operations;

To develop an on-going 25-year plan for development of additional water sources (and related land) to fulfill projected safe water needs of 350 community water systems;

Maintain a program for engineering surveillance of all public water supply sources and facilities including treatment works;

To complete a sanitary survey and classification of all shellfish growing areas in the Commonwealth, comprising approximately 2,000 miles of coastline and over 50,000 acres, and to develop capability for conducting resurveys and reclassifications of each area once every year in accordance with National Shellfish Program Standards;

To expand the program for conducting biological surveys review and approve of proposals, and preparing contracts for chemical treatment and supervising control work on lakes, ponds, streams and other bodies of water within the Commonwealth;

To achieve a fully adequate engineering surveillance program and review of plans for existing and new liquid waste treatment plants, to insure compliance with public health laws, rules, and regulations; and

To establish an on-going program for public health surveillance of streams.

Close liaison is maintained by the Bureau with the Public Health Service in the U.S. Department of Health, Education and Welfare. The Bureau also exchanges information and receives cooperative assistance from other Federal agencies including U.S. Army Corps of Engineers, U.S. Geological Survey, U.S. Soil Conservation Service, the U.S. Department of Housing and Urban Development, and the Federal Water Pollution Control Administration. The Bureau reviews and endorses applications for Federal planning funds, reviews engineering reports on sewerage and water (some being done with Federal funds), performs analyses on shellfish (interstate shipments), supplies statistics, and cooperates in analytical work. The Federal agencies supply the Division with technical and research data.

The Bureau of Environmental Health Engineering continually cooperates with other State agencies as well as local community agencies in most matters pertaining to sanitation and water supply. In addition to providing laboratory facilities for testing and analysis, the Bureau reviews plans and reports for water and sewerage improvements, and reviews proposals for

developing wetlands from a public health standpoint.

The Bureau participates in the comprehensive planning process continually by such activities as discussion of proposals and feasibility studies, and review of plans from a public health standpoint. A large amount of staff time is spent participating in the planning process as differentiated from regulatory or research activities.

The Bureau of Environmental Health Engineering collects and maintains a considerable amount of basic data and information pertaining to water resources. This data and information includes water quality analysis, water consumption data, statistical data, and engineering reports. Analyses information is stored alphabetically by community and is available at the central office of the Bureau and at the Lawrence Experimental Station. Water consumption data are also filed alphabetically and are available in printed summaries periodically.

Massachusetts Department of Public Works.

(1) Division of Waterways. The Division of Waterways was established within the Department of Public Works to carry out the provisions of Chapter 91 of the General Laws. The duties and responsibilities of the Division are contained in Chapters 91 and 648 together with a number of special acts. These duties and responsibilities include:

To undertake shore protection, harbor development, stream clearance and flood control work;

Coordinate Federal harbor development and flood control projects;

Take charge of great ponds, public rights in lands, flats, shores, and tide waters belonging to the Commonwealth;

Execute improvements, maintenance, and protection of tidal and non-tidal rivers and streams and shores along public beaches; and

Control use and construction, by others, on lands under its jurisdiction by licensing powers.

In order to carry out its prime responsibilities under the statutes, the Division has formulated the following goal: to protect the shorelines of the State while providing the public with safe, functional and convenient access to, and upon, the public waters of the Commonwealth. These waters include the coastline, harbors, rivers and great ponds.

For the purpose of carrying out their goal, the Division has

set forth approximately ten objectives. Five of these objectives relate directly to water resources management. They are:

To regulate filling, and to control the erection and maintenance of dams and other structures;

To provide interstate cooperation in the use of mutual boundary waters;

To conduct hurricane and flood control construction studies and construction projects;

To provide State cooperation with Federal agencies in river and harbor projects; and

To provide State cooperation in regional compacts with non-contiguous states.

The Division of Waterways, because of the similarity of certain work performed relates to the U.S. Corps of Engineers, especially in projects requiring dredging for navigation purposes. For projects of mutual interest the contracting agency would provide the other agency with copies of plans or reports.

The Division of Waterways does not currently maintain water resources data on a regular basis. When needed for specific projects, the Division conducts surveys to provide study or design information and data. The Division obtains certain basic data including tide information, stream flows, and rainfall data from the U.S. Coast and Geodetic Survey.

The Division carries out an interrelationship of its undertakings with water resources planning by:

1. Having a representative on the Massachusetts Water Resources Commission, and

2. Reviewing proposals for developing wetlands in cooperation with the Department of Public Health, the Division of Water Resources, and the Division of Conservation Services, Department of Natural Resources.

Massachusetts Department of Commerce and Development. The Department of Commerce and Development was established in 1964 under Chapter 23A of the General Laws. Many of the duties of the Department are in relation to housing and urban renewal which are contained in Chapters 121 and 121A of the General Laws.

The broad powers included in the enabling legislation include provisions for all facets of comprehensive planning. The Department, as organized, incorporates a deep involvement in the planning process but does not have a program for Statewide planning.

The Planning Division administers the Federal "701" planning program for local communities and acts in an advisory capacity in regional and metropolitan planning in the State.

Other activities of the Department include economic development, tourism, housing, and industrial and urban renewal. The availability of water in adequate quantity and quality is recognized as vital to all the activities within the domain of commerce and development and therefore the Department is expected to exert a great influence on any water resources planning which is undertaken. The Department should provide a large input in studies undertaken in the realms of economic and population projections. One example of where a study of water resources could be combined with efforts of the Department of Commerce and Development is in the area of developing offshore resources of the State.

Recently (November 1, 1968), a new State Department of Community Affairs has come into being. Under legislation passed during 1968 under Chapter 23B of the General Laws, several of the functions of the Department of Commerce and Development have been transferred to the new department including housing, urban renewal, relocation and planning assistance.

At the present time, it is not expected that the new department will have an increased role in water resources planning over that presently undertaken by DCD. It is also expected that the Department of Administration and Finance will coordinate the several planning documents, including water resources, that will make up the State's comprehensive development plan.

Massachusetts Department of Agriculture. The Department of Agriculture was established under Chapter 128 of the General Laws. The department is principally a regulatory agency looking after the wholesomeness and quality of agricultural commodities and the health of livestock.

The duties of the department include the regulating of milk producers and out-of-state pasteurizing plants which distribute within the Commonwealth. The State Department of Public Health regulates pasteurizing plants within the State. In cooperation with the Federal Department of Agriculture, the Department carries out inspection of animal health, consumer marketing, and plant pest control (for agricultural commodities).

The major function of the Department pertaining to water resources is to check the quality of water used in milk production. Although the Department is most interested in assuring quantity and quality of water for agriculture use, they do not, themselves, undertake any program in this behalf. Studies in relationship to water needs for agriculture purposes are undertaken by the

University of Massachusetts College of Agriculture Extension Services.

Metropolitan District Commission. The Metropolitan District Commission was formed in 1919 by reason of a State constitutional amendment requiring that all State boards and commissions be organized into not more than twenty departments. The Commission as organized under Chapter 92 of the General Laws encompasses functions of providing sewerage, water and parks systems in the Boston Metropolitan Area.

In the field of water resources, the Commission has been charged with the construction, maintenance and operation of water and sewer systems, sufficient to serve its member communities. The Commission has separate divisions for the operation and maintenance of its separate functions pertaining to water, sewerage, and parks. The Construction Division incorporates the function of long-range planning of facilities and resources needed to meet future demands.

The Metropolitan District Commission does not carry out a fully comprehensive planning program since its responsbility is limited to that of a service function. It does, however, conduct and carry out a planning program wherein it is continually investigating and programming the measures needed to serve the expanding needs of its member communities in the field of its jurisdiction.

The existing systems evolved from long-range planning efforts, that although essentially "single-purpose" in nature, contain the element of providing for projected future needs.

The commission's major goal may be summed up as follows: to design and construct necessary major additions and improvements to the water, sewerage, and flood control systems within the metropolitan area.

It is the commission's objective to continue studies necessary to determine water and sewerage needs to meet future demand and to construct such improvements as are needed therefor.

Basic information collected by the commission includes rainfall data (in watersheds which contribute to supply sources within the system); quality samples of water from reservoirs, aqueducts and pipelines; air temperatures; evaporation test results; consumption data; river flows (gaging by U.S.G.S.). Information is manually filed in the central office of the MDC with copies sent to interested agencies.

The MDC presently serves about 40 communities with sewerage, and 42 communities (including 10 outside its district) with water.

Because of its large service area, the even larger area of influence of its water resources and reservoirs (extending about 70 miles to the west of Boston), and its experience and expertise in providing systems of such magnitude, the MDC is an extremely important "partner" in the planning and management of water resources in Massachusetts.

University of Massachusetts.

(1) Water Resources Research Center. During 1965, the University of Amherst established a Water Resources Research Center, the chief objectives of which were:

To conduct basic, developmental and applied research relevant to water resources and their efficient use; and

To stimulate the development of curricula and research programs within the framework of the Graduate School to provide professional workers with advanced training for the water resources fields.

The Center, while basically funded under Public Law 88-379, the Water Resources Act of 1964, has received yearly grants to conduct special studies for the Massachusetts Water Resources Commission. It is hoped that employees of the Commission's two divisions will be able to avail themselves of advanced training courses in Water Resource Management which may be arranged on an in-service training basis.

Current studies involving the Connecticut basin include a study to be conducted in cooperation with the wildlife unit concerning wetlands classification, an evaluation of discontinuities in regional population projections, watershed responses to hydrologic influences and many others.

(2) Cooperative Wildlife Research Unit. The unit at the University of Amherst was established in 1948. The chief objectives of the unit are to:

Train personnel in the wildlife field;

Conduct basic research in the utilization of wildlife resources;

Promote education through such means as demonstration, lecture and publication; and

Provide technical assistance to State wildlife and other agencies.

Federal funds available under P.L. 86-686 are augmented by

grants from the Wildlife Management Institute and the Massachusetts Division of Fisheries and Game.

A current study of marshes along the Connecticut River from Turners Falls to Holyoke will examine their history and utilization, including the recreational aspects of waterfowling.

A proposed project will determine criteria for evaluating inland wetlands.

(3) Cooperative Fishery Unit. The unit at the University of Massachusetts was established in 1964 under authority of P.L. 86-686. Its aims are comparable to those of the wildlife unit.

The unit is supported by the U.S. Bureau of Sports Fisheries and Wildlife, the University, the Massachusetts Division of Fisheries and Game and the Massachusetts Division of Marine Fisheries.

Current studies involving the Connecticut River include a life history of the shad, food habits of all species and factors affecting their distribution and abundance. A study to evaluate factors causing shad mortality is planned..

(4) Massachusetts Agricultural Experiment Station. This facility was established by the State Legislature in 1887 with the support of Congress. Its principal functions include:

The conduct of research in the natural and biological sciences;

The conduct of economic research;

The operation of a field station to conduct specialized research in plant culture, disease, genetics, environmental pollution's effect on economic plants, etc.; and

The operation of a cranberry station whose studies include the effect of pesticides on estuarine pollution.

(5) Massachusetts Cooperative Extension Service. The Service is the educational arm of the land-grant college (University of Massachusetts) and operates through the University staff, county, and regional Extension specialists. The staff provides information and guidance concerning agricultural production and marketing, natural resources development and use, home economics and consumer services and youth (4H).

The Service recently published a paper by Professor MacConnell concerning the use of aerial photography in evaluating

recreational potentials along the Connecticut River.

Department of Community Affairs. The Department was created by the amendment of the General Laws inserting Chapter 23B, sections 1-26. Among other functions it is concerned with zoning, planning, and training of personnel at the community level. The legislation was passed in 1968 and directs the new agency to "formulate in cooperation with the related State agencies and submit annually to the Governor and the General Court beginning on or before December 4, 1970 and from time to time thereafter biannually a five-year Community and Environmental Development Program, including, but not limited to: establishment of the number and location of areas requiring the need and priority for area improvements involving sewer, water, parks, public safety, urban beautification, solid waste, health welfare education and recreation centers, traffic and public works, establishment of unified code enforcements personnel training and evaluation procedures; and establishment of a financial program which shall identify the required participation by Federal agencies, Commonwealth, and municipalities, and which shall give consideration to the Commonwealth contributing one half of the Federal share;..."

Future Administrative Structure. A new administrative structure will be placed in operation on April 30, 1971. The many agencies of the Commonwealth will be grouped in eight executive offices, each headed by a secretary to be appointed Bby the Governor. While each existing agency shall be transferred intact, provisions have been made for the shifting of certain functions of specific agencies as is found to be appropriate.

Functions concerning water and related land resources are largely to be grouped under Environmental Affairs. Agencies specifically listed include the following: Departmental of Agriculture; Department of Natural Resources, including the Division of Fisheries and Game and Water Resources Commission; the Metropolitan District Commission; the Outdoor Advertising Board and Division; and several other lesser boards and commissions.

Provisions are included to permit the later inclusion of the Pesticide Board and the air and water pollution control functions of the Department of Public Health. The remainder of the functions of the Department of Public Health will be placed under the Executive Office for Human Services.

The Executive Office of Communities and Development will contain the Departments of Commerce and Development, the Department of Community Affairs and the Metropolitan Area Planning Council. The office will, among other duties, plan for and promote the economic development of the Commonwealth.

III - POLICY

CENTRALIZATION OF RESPONSIBILITY FOR WATER MANAGEMENT FUNCTIONS

Since water resources problems are seldom confined within the physical boundaries of individual political sub-divisions, centralization of responsibility in most phases of water management has tended to occur. Water for consumptive use, waste water and floodwaters are managed with differing degrees of centralization, based on precedent, source of funds or State and Federal enabling legislation.

In Massachusetts, the mangement of water for human consumption falls under the jurisdiction of the Massachusetts Department of Public Health, to the degree that it is the agency which maintains the standards of water purity for drinking and swimming purposes. Public Health does not, however, function in the area of planning or construction of new supplies. These functions have been fragmented among the various cities and towns, the Metropolitan District Commission and private water companies. The greatest degree of centralization is represented by the Metropolitan District Commission, which obtains water from both the Connecticut and Merrimack watersheds and serves over 1,600,000 people (30 percent of the total State population), in over 30 cities and towns. Population growth and competition for available supplies will require that a single State agency give greater direction to the planning, construction and operation of water supply systems. Several advisory studies have already been sponsored by the Division of Water Resources involving both ground and surface water supply potentials.

The Massachusetts Clean Waters Act authorized the Division of Water Pollution Control to give forceful direction to cities, towns, districts and industries in abating the pollution of the inland and coastal waters of the Commonwealth. Local initiative is involved in hiring consultants, partial funding, site location, and placement of lateral sewers, but waste water standards, implementation schedules, plan review, inspection, and enforcement are clearly State functions.

The Division of Water Resources, under the Water Resources Commission has pre-eminent authority in the field of flood control. As authorized by statute, the division is the State coordinating agency with the Corps of Engineers in flood control work, and supervises the Department of Agriculture's small watershed program (P.L. 566). Local sponsors of small watershed projects apply to the Water Resources Commission, which acts as the coordinating and contracting agency, and acquires title to lands needed for works of improvement.

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The Division of Waterways in the Department of Public Works becomes involved with cities and towns in local flood abatement projects which usually involve the installation of riprap materials, flood walls and channel dredging.

While the tendency to centralize water management functions under the two divisions of the Water Resources Commission may continue, it is planned that this agency will itself decentralize. The establishment of field offices based on watersheds is contemplated in order to deal more effectively with water resource problems and the public.

"HOME RULE" CONCEPT

Article XXXIX of the Articles of Amendment to the Constitution of the Commonwealth of Massachusetts indicates that the General Court shall have the power to act in relation to cities and towns, but only by general laws which apply alike to all cities, or to all towns, or to a class not fewer than two, and by special laws on the basis of local petition, or by a two-thirds vote of each branch of the General Court on the recommendations of the Governor.

It confers to cities and towns the right of self-government in local matters, the power to adopt and revise charters consistent with the Constitution, and the power to enact ordinances or by-laws not inconsistent with the Constitution. It generally forbids to cities and towns the regulation of most elections, the levying and collection of taxes, borrowing, disposition of park land, enactment of private or civil law, the provision of punishment for a felony or imposition of imprisonment.

This strong "home rule" amendment was passed in 1966, and its meaning and impact on water resource management and development is not clear at this time.

FINANCING

The financial responsibility for the construction and maintenance and operation of water pollution control facilities rests with the person, municipality, sewer district, or industrial establishment discharging the waste water. The producer of the waste water must be prepared to bear the cost of pollution abatement. The State under the Massachusetts Clean Waters Act is authorized to make grants to municipalities and sewer districts to match Federal grants for sewage treatment facilities on any case; the State may make grants to municipalities and sewer districts so that the cost to the municipality or district shall not exceed forty percent. The State grant program is administered by the Division of Water Pollution Control. The Federal grant program is administered by the Federal Water Pollution Control administration.

In the case of flood control projects constructed under cooperative agreements between the U. S. Department of Agriculture (P.L. 566) and the Massachusetts Water Resources Commission, local sponsors (towns, conservation districts, etc.) are authorized by statute to obtain land and easements needed for works of improvement. In order to facilitiate the program, the Division of Water Resources has, in most instances, however, purchased needed sites, using bond issue funds provided by special acts of the legislature. Other agencies which may contribute funds to provide multi-purpose benefits in such projects include the Massachusetts Division of Forests and Parks, the Massachusetts Division of Fisheries and Game and municipalities for water supply purposes.

COOPERATION, COORDINATION, AND COST SHARING

Federal Programs. The enabling legislation creating the Water Resources Commission and the Division of Water Resources in 1956, placed heavy emphasis on the role of this agency in coordinating all the State and Federal programs which have an impact on water resources. The Commission remains the State's primary contact with the Corps of Engineers and U. S. Soil Conservation Service during all stages of the planning, development and operation of their various water management programs. The views of appropriate State and local agencies are solicited by the Division of Water Resources to evaluate the effect of proposed flood control projects, and to establish whether multi-purpose reservoirs through cost sharing might be planned. In most P.L. 566 projects, and in some Corps of Engineer projects, site acquisition is made by the State agency using State funds. The Water Resources Commission, through the Division of Water Resources, reviews design plans and is, as previously stated, the contracting officer for the structures involved in the small watershed protection program.

Other areas of State-Federal cooperation involve the mutual funding of groundwater favorability studies by the Division of Water Resources and the U. S. Geological Survey; the contribution of funds to the Geological Survey to partially defray the operating costs of certain stream gaging stations; and the provision of State rainfall data to the U. S. Weather Bureau. In the area of planning, the Division of Water Resources cooperates with the Water Resources Council and receives grants for planning purposes under Title III of the Water Resources Planning Act, P.L. 89-80. The Water Resources Commission provides funds to match (in part) Federal grants available to the Water Resources Research Center at the University of Massachusetts.

The Water Resources Commission, through the Division of Water Pollution Control works cooperatively with the Federal Water Pollution Control Administration in the Department of the Interior to

abate water pollution under the pertinent State and Federal statutes. The State agency administers Federal grants-in-aid to communities for the planning and construction of waste water treatment facilities, and further provides State grants-in-aid. Communities can receive up to 80 percent of the cost of approved treatment facilities by obtaining combined State-Federal grants.

The Massachusetts Division of Fisheries and Game works cooperatively with the U. S. Bureau of Sports Fisheries and Wildlife in the Department of the Interior, and administers cost-shared projects under the Dingell-Johnson and Pitman-Robertson programs. This agency in turn cost-shares research projects with the Fisheries and Wildlife cooperative units at the University of Massachusetts.

The Massachusetts Department of Public Health cooperates with the U. S. Public Health Service in a program of water supply protection and the suppression of water-borne diseases.

Interstate. The Commonwealth by statute is pledged to a program of interstate cooperation. By virtue of special acts of the legislature, Massachusetts, through the Water Resources Commission, is represented on interstate river valley flood control commissions for the Thames, Connecticut and Merrimack Rivers.

The New England Interstate Water Pollution Control Commission was an active organization before the passage of strong Federal pollution abatement legislation. This organization, which includes the New England states and New York, continues its cooperative program.

Interstate cooperation in studying water resource problems will undoubtedly grow as the New England River Basins Commission develops its planning program as authorized by the Water Resources Planning Act. Other studies with Federal impetus that have fostered interstate cooperation include the Northeast Water Supply (NEWS), the North Atlantic Regional Water Resources Study (NAR), and the New England-New York Inter-Agency Committee (NENYIAC).

Political Sub-divisions. The Division of Conservation Services of the Department of Natural Resources administers an active self-help program with town and city conservation commissions. The Commissioner of Natural Resources may reimburse cities and towns for up to fifty per cent of the costs incurred in acquiring, maintaining, improving, protecting, conserving or properly utilizing open spaces and other land and water areas.

As stated previously, the Division of Water Pollution Control administers both Federal and State grants to cities and towns to provide sewage treatment plants.

The Division of Water Resources has been authorized to contract for the construction of P.L. 566 projects sponsored by a city or town.

Other State agencies having cooperative programs with cities and towns include the Division of Waterways in local flood control works of improvement, and the State Reclamation Board in drainage projects.

Multi-purpose Operations. The statute prescribing the duties of the Water Resources Commission is a virtual mandate to consider multiple use of water resources. Chapter 21, Section 9 of the General Laws states that the Commission shall "make recommendations for legislation designed to provide the Commonwealth with a basic water policy based upon the common and interdependent interests of agriculture, industry, recreation, wildlife, conservation, domestic consumption and flood prevention."

The legislation further requires the Commission to be the coordinating agency between all departments in carrying out water conservation and flood control programs. With this legislative background, the Commission has viewed water resource developments as potential opportunities for multiple use operation. The Commission has promoted P.L. 566 flood control projects with secondary use or uses for fish and wildlife management, supplemental flow, recreation, and water supply. All Corps of Engineers projects are reviewed by the Water Resources Commission and recommendations for multiple use development are solicited from appropriate agencies. Corps flood control projects in Massachusetts have been placed under use licenses to several agencies including the Division of Fisheries and Game, the Division of Forests and Parks and municipal water supply departments.

USE OF EXISTING AUTHORITY

Existing authorities are utilized by State agencies in Massachusetts to the extent that funds and staff are provided by legislative appropriation. In many instances, authority, powers and duties are outlined by legislation several years before adequate funds or personnel are provided.

The Water Resources Commission was authorized in 1967 to take land and construct storage sites for low flow augmentation. The flood abatement program has understandably not yet advanced to the point where this phase of the program can be implemented.

CHANGES

Recently adopted changes. Most of the important legislation relating to water resource management is of very recent origin (see State Law Statutes).

Recommended but not adopted. The legislation submitted in the 1968 legislative session which would have provided a ten-year bond issue to be used to fund a comprehensive water resource planning program was defeated. The planning program will continue to be a major goal of the Water Resources Commission, but an alternative method of financing will be sought.

Completed Study. A HUD-financed study of the organization of State government has recommended sweeping changes in the structure and functions of State agencies. The report recommends that the 173 existing units who now report directly to the Governor should be reorganized into eleven State cabinet-level offices.

The study was embodied in legislation which was passed in the 1969 legislative session. The report's recommendations will be placed in effect on April 30, 1971. (See Administrative Structure.)

IV - PROGRAMS

RESEARCH

Many State agencies conduct research concerned with water and related land resources. Continuing programs of research are conducted by staff personnel in the Division of Marine Fisheries and the Division of Fisheries and Game. The Division of Water Resources and the Division of Water Pollution Control conduct research, for the most part, by contracting for the services of private consultants.

The Fisheries and Wildlife Cooperative Units at the University of Massachusetts conduct water related research and often receive financial support from the Division of Fisheries and Game and the Division of Marine Fisheries, while the University Water Resources Research Center receives grants from the Division of Water Resources and the Division of Water Pollution Control. The latter agency was granted ten million dollars under the Massachusetts Clean Waters Act to "conduct a program of study and research and demonstration, by itself or in cooperation with other governmental agencies" to find improved methods of water quality control. At present, research funding dealing with other phases of water resource management is available in relatively small amounts.

The Department of Public Health has conducted problem-oriented research with the use of consultants, with industry sponsorship, but has no program of continuing research.

DATA COLLECTION AND INTERPRETATION

The Division of Water Resources collects and interprets data from the 116 rainfall stations which it operates. As part of its program of well driller registration, it maintains logs of all wells installed In addition, the Division works cooperatively with the U. S. Geological Survey in maintaining a network of 27 stream gaging stations, in obtaining data from observation wells, and in conducting groundwater favorability studies. The Department of Public Works maintains 25 stream gaging stations, while the Metropolitan District Commission operates 16. The Division of Water Resources gathers data on flood levels in relation to the implementation of flood plain protection laws with the cooperations of the Corps of Engineers. In specific water use problem areas it maintains records of water levels and consumption rates.

The Division also receives and stores stream runoff data from the U. S. Weather Bureau, snow survey and flood profile reports from the Corps of Engineers, and selective low flow measurements and aerial photographs of flood conditions from the U. S. Geological Survey. The Division acts as a central repository of

hydrological data for its own use and for the convenience of other agencies and the public.

The Department of Public Health conducts a program of routine water purity sampling covering over 300 domestic water supply systems, and collects data relative to shellfish purity and swimming water standards. The Metropolitan District Commission collects water quality data on its large reservoir and watershed holdings.

The Division of Water Pollution Control has collected the water quality data necessary to establish stream classification standards throughout the Commonwealth. Although problem oriented data collection is continuing, regular collection of data from prescribed stations was limited at the time of this writing (1968) to six automatic monitoring stations recording pH, DO, temperature and conductivity. The Division also compiles monthly reports from sewage treatment plant operators.

The Division of Marine Fisheries collects and interprets data on commercial and sports fisheries derived from license and permit records, catch statistics and specific estuarine studies. Biological information collected includes data on DO, pH, salinity, and CO_2. Population statistics and age and growth studies are used as a basis for harvest regulations on certain inshore species.

The Division of Fisheries and Game collects and interprets data needed to preserve and enhance inland sports fisheries and game. Limnological characteristics of ponds and streams, population estimates, and age and growth data are collected to provide the basis for the management of fresh water fisheries. Creel census surveys provide catch data and fishing pressure information. Participation levels can also be inferred from license and permit records maintained by the Division. Biological data concerning game birds and mammals are gathered to wisely regulate harvest rates.

The Division of Forests and Parks collects data relative to the present use and future demand for outdoor recreation, timber stand inventory and forest product utilization. The Division also maintains 13 weather stations which provide data to compute the forest fire index. Records on the size and frequency of occurrence of forest fires are also maintained by this Division.

The newly established Division of Mineral Resources administers laws, rules, and regulations regarding the mineral resources of the Commonwealth, but the collection and interpretation of geoscience data is the responsibility of the State Geologist, a new position in the Department of Public Works.

Inventory studies relating to water quality are, from varied standpoints, conducted by the Division of Water Pollution Control, the Department of Public Health, the Division of Fisheries and Game and the Division of Marine Fisheries.

Water resource inventories aimed at identifying quantitative resource potentials regarding surface supplies, ground water availability and multi-purpose impoundment sites are conducted by the Division of Water Resources. A central data bank of all water-oriented inventory information will be set up in this agency.

A program which provides technical assistance to towns, features the use of a "Natural Resource Team" approach. Representatives of the many State and Federal and county agencies in the resource field, at the request of a city or town, prepare a Town National Resource Inventory.

PLANNING

The 1956 legislation creating the Water Resources Commission was a mandate to provide a comprehensive water policy which would include "the common and interdependent interests of agriculture, industry, recreation, wildlife, conservation, domestic consumption and flood prevention" (GL. c 21, s. 9). The Governor of the Commonwealth, on September 15, 1966, designated the Water Resources Commission as the Massachusetts State agency to administer the program authorized by Title III of the Water Resources Planning Act of 1965.

Until recently, the Division of Water Resources has been engaged in many problem-oriented studies and research projects. Cooperative studies with Federal agencies have produced a vast amount of data; however, a definite program to fill the gaps in available data, to correlate it and evolve a comprehensive long range water resources plan for the State has just begun.

Comprehensive Type IV river basin studies are currently in progress in cooperation with the U. S. Soil Conservation Service. Other comprehensive State-Federal studies are under way or planned for the Connecticut River Basin, the Southeast New England Coastal drainage and the Charles River Basin.

Small watershed work plans (P.L. 566) have been completed on 10 watersheds, and are being formulated on 4 others. Applications on 3 additional watersheds have been approved by the Water Resources Commission and 2 are pending approval. The completed plans call for the construction of 47 dams of which 29 are multi-purpose structures incorporating flood control uses with fish and wildlife enhancement, recreation, low flow augmentation, or water supply. Single purpose flood control structures are

currently planned for 18 sites. Other land treatment and structural measures are planned in this program which involves the Soil Conservation Service, the Division of Water Resources, local sponsors and other cooperating State agencies.

Such sub-basin work plans have, with increasing emphasis, featured a multi-use approach to watershed planning and will be incorporated into more comprehensive plans for the State and the New England region.

Additions to the current staff of the Division of Water Resources will be needed to implement the Statewide water resource planning program recommended by a recent study. A pilot program is developing a water management plan for the Ipswich River watershed. This 155 square mile drainage embodies the full range of management problems which water resource engineers and planners are likely to face in the Commonwealth. By demonstrating the efficiency of comprehensive planning on this watershed, the Commonwealth will have a model for the establishment of a Statewide water management program.

The Division of Water Resources will provide overall guidance in water resource planning, incorporating the needs of other agencies and political subdivisions in the more comprehensive State plan. Many State agencies and regional planning groups have established their water needs, but broad-based long range planning at the State level is essential if efficient watershed management is to become a reality.

CONSTRUCTION AND DEVELOPMENT

Flood Control. The Division of Waterways of the Department of Public Works is authorized under Chapter 91 of the General Laws to construct works of improvement for flood control purposes. Projects constructed by this agency usually involve channel improvements, bank stabilization, stream clearance and, in some cases, the repair of flood damaged dams. This agency handles approximately 20 projects a year, the number depending on requests and budgetary appropriations. This program is local in scope, usually requiring fifty percent funding by the local community requesting the project.

Chapter 21, Sections 8-16 of the General Laws established the Water Resources Commission and designated it as the agency of the Commonwealth having supervisory responsibility over programs provided for by the Federal Watershed Protection and Flood Prevention Act. Since 1961, the Commission has contracted for the construction of 18 works of improvement on the sites it has purchased. The U. S. Soil Conservation Service has primary responsibilities in the design of structures and in the provision of resident engineering services during construction. Project plan review, contract administration and project maintenance are responsibilities of the Water Resources Commission.

The Commission is the State agency designated to review U. S. Army Corps of Engineers flood control project plans. In some instances the Commission has signed project assurances, and in other cases, municipalities have done so. The Water Resources Commission makes recommendations regarding the licensing of Corps of Engineers flood control reservoir storage basin areas to appropriate state agencies.

Water Supply. The development of water supply reservoirs, well fields, and water systems is generally considered to be a responsibility of local municipalities, or private companies serving municipalities or particular areas. Development of a major water supply system for the Greater Boston Metropolitan area was made possible by enabling legislation passed in 1895 (Chapter 92, section 10). This legislation, and later amendments, authorized the Metropolitan District Commission to acquire over 100,000 acres of water and watershed lands, including Wachusett and Quabbin Reservoirs, and the Ware River diversion. Over 30 percent of the population is served by this system.

Maintaining water quality standards for domestic water supplies is the responsibility of the Massachusetts Department of Public Health as specified by Chapter 111 of the General Laws. Water supplies for public use must be approved by this agency.

No agency has broad powers in the allocation of water supplies, although under specific legislation the Water Resources Commission has been authorized to monitor shared supplies. The Division of Water Resources gathers and makes data available regarding potential groundwater sources and reservoir sites. Chapter 767 of the Acts of 1970, authorized a five million dollar bond issue to acquire flood control, low flow, and water supply reservoir sites.

In the administration of the Watershed Protection and Flood Prevention Program (P.L. 566), the Water Resources Commission has approved the construction of multi-purpose dams incorporating municipal water supply and flood control provisions. While the State acts as the contracting agency in the construction of such reservoirs, the town must agree to pay for that portion of the structure needed to provide the additional water supply storage and facilities.

Water Quality Control. The Division of Water Pollution, under the Water Resources Commission, is charged with the maintenance of water quality standards. All plans for the construction of waste treatment facilities discharging to surface waters must be approved by this agency. The State and Federal grant programs for the construction of municipal sewage treatment plant facilities are also administered by the Division of Water Pollution Control.

Construction of industrial treatment facilities is a private responsibility, although joint municipal-industrial plants have been approved where wastes are compatible and cost-sharing arrangements could be satisfactorily arranged.

Navigation. Works of improvement to benefit navigation may be constructed by the Division of Waterways of the Department of Public Works and, within the Port of Boston, by the Massachusetts Port Authority.

(1) Commercial. Navigational improvements at the State level to facilitate the use and development of the Port of Boston is the prerogative of the Massachusetts Port Authority, as established by the Acts of 1956 (see I - STATE LAW - Synopsis - Cities, Towns, and Counties, supra).

(2) Recreational. The Division of Waterways on a cost-sharing basis with coastal communities establishes marinas and makes channel improvements for recreational boating under the authority of Chapter 91. It also operates several State piers used both commercially and for recreational boating. The Division of Waterways may excavate and dredge mooring basins for yachts and small craft, dredge channels, construct shore protection and remove hulks and wrecks within the Port of Boston providing that said acts are not in conflict with the development plans of the Massachusetts Port Authority.

Hydro-Power. The development of hydroelectric power facilities in Massachusetts is primarily a function of private utility companies serving the consumer. Some industrial firms generate power for inplant use from company-owned dams. The Metropolitan District Commission operates 3 stations in conjunction with their water supply system, selling its output to private utility companies for transmission to consumers. One city operates four plants for its own municipal light and power system.

The breakdown of hydroelectric power production in Massachusetts is as follows:

Private utility companies own or lease 25 hydroelectric stations which generate	182,566 Kilowatts
The Metropolitan District Commission owns four stations which produce	9,060 Kilowatts
The City of Holyoke owns four stations which produce	2,906 Kilowatts
47 industrial firms generate and use	43,690 Kilowatts
Total Hydroelectric power production from 80 stations in Massachusetts	238,141 Kilowatts

A pumped storage project being constructed on the Connecticut River in Northfield will produce 1,000,000 Kilowatts by 1972, and

a planned project on the Deerfield River, Bear Swamp, will produce 500,000 Kilowatts upon its installation.

General Recreation. The Division of Forests and Parks operates 45 outdoor recreation facilities which hosted 2,028,906 visitors in 1968. Construction of major facilities, such as dams, bathhouses, beaches, paved areas, and comfort stations is done on contract with private firms. Division employees often construct trails and facilities appurtenant to the 1980 campsites operated in these areas. Three forestry camps operated in cooperation with the Department of Natural Resources and the Department of Corrections are used in forestry-related recreation development of State forest holdings.

During the past ten years, the Division of Forests and Parks has developed ten new State park facilities, and five more are in the active planning stage (acquisition completed). In addition, three outdoor recreational areas constructed by the Corps of Engineers in connection with flood control reservoirs have been turned over to the Division. Four ocean beach facilities formerly under the jurisdiction of the Department of Public Works have been assigned to this division, as have three indoor skating rinks. Two additional indoor rinks and 7 planned indoor pools will be constructed by the Department of Public Works, but operated by the Division of Forests and Parks.

Additional development of general recreation facilities has been assured by the passage of legislation providing for a $15,000,000 bond issue to be largely used for site acquisitions, design and development of State forests and parks. A great emphasis will continue to be placed on providing water-based recreation facilities, but an increasing emphasis will probably be placed on winter recreation.

Fish and Wildlife. The Division of Fisheries and Game has constructed facilities required for the propagation of freshwater fish used for restocking purposes. Raceway and pool systems are used to rear trout at five installations. A new facility just completed adjacent to the Swift River, the Charles I. McLaughlin Hatchery, will be the first fully modern facility operated by the Commonwealth. Other hatcheries in the basin include Montague, Sunderland, and Palmer.

With an anticipated production of 200,000 pounds, its operation will allow for the closing of some of the less efficient hatcheries which today produce approximately 370,000 pounds in total. Hatcheries in Massachusetts obtain water from surface supplies, gravel-packed wells and springs. In addition, three pond systems with a total surface acreage of 270 acres are maintained for the propagation of warm water species for restocking in managed lakes.

The Division has constructed and/or maintains two impoundments for waterfowl management totalling 163 acres, and two impoundments for warm water fishing with an aggregate area of 127 acres. The emphasis of this agency has been directed toward the provision of access to existing ponds rather than to the construction of new impoundments.

REGULATION*

Water Use.

(1) Surface water. There is no reference in the General Laws to any authority to regulate water use beyond the references to pollution, drinking and swimming water standards and the right to use certain public water for fishing, fowling, etc. The riparian doctrine, as embodied in case law governs the right to use surface waters, except where special acts of the legislature have granted use rights to certain users to specific waters. The Department of Public Utilities approves rates set by private water companies.

(2) Groundwater. There are no general laws regulating the use of sub-surface water except those relating to their protection from pollution caused by the sub-surface disposal of sewage. In a specific instance of groundwater use conflict, the Water Resources Commission has been designated by the legislature as the agency to supply technical information as an aid to arbitration.

There is an increasing need for the delegation of the authority to allocate water from the legislature to a qualified State agency.

Water Quality. Regulations governing the discharge of any pollutant to surface waters are made by the Massachusetts Division of Water Pollution Control. The sub-surface disposal of sewage is regulated by the Department of Public Health, the agency which also issues regulations relative to the purity of water supplies and shellfish, swimming area suitability the application of pesticides, and camping area standards.

Construction. All filling of and erection of structures in public waters must be licensed by the Division of Waterways of the Department of Public Works. In addition, any filling of coastal and inland wetlands fall under the provisions of Chapter 131, section 40, and Chapter 130, section 27A, respectively, of the general laws. Construction necessitating filling in such areas is subject to regulations to protect the public interest from the view points of water supply and flood control. These regulations apply to all private and governmental bodies except

* See also I - STATE LAW - Regulatory Authority, supra.

for the Reclamation Board, and mosquito control projects in the case of coastal wetlands and land used for agricultural purposes.

The construction or alternation of certain dams is regulated by the Department of Public Works under the provisions of Chapter 253, Sections 44-49. Plans for any dam which is to be over ten feet in height, will impound more than one million gallons or where the area draining into the impoundment exceeds one square mile, must be submitted and approved by the Commissioner of the Public Works Department. Dams constructed for irrigation purposes, and certain others, may be exempted. Dams which are under the Commissioner's supervision are subject to inspection as often as once in two years.

An opinion of the Attorney General, dated July 3, 1933, indicates that the State departments operating within their statutory powers and duties, or under the authority of special acts of the legislature, need not submit their construction plans to the county for approval.

A legislative resolve, Chapter 119, acts of 1968, formed a special commission to study the laws and procedures governing dam construction and maintenance.

Well Drilling. The Water Resources Commission, under authority of Chapter 21, section 16, is authorized to register any person engaged in the business of digging or drilling wells within the Commonwealth. Within thirty days after completion of any well, the driller must submit a report setting forth such information as the Commission may require under the rules and regulations it may establish.

Channel Encroachments. As discussed under "Construction", the Division of Waterways has jurisdiction over the filling of public waters. The previously cited legislation regulating the filling of coastal and inland wetlands can also prevent channel encroachment.

By special act of the legislature, the Water Resources Commission has been authorized to establish encroachment lines and flood plain zones on several streams in eastern Massachusetts.

Use of Flood Plains. The filling of flood plains along inland waters and areas subject to tidal flooding is regulated by the previously cited legislation, Chapter 131, section 40, and Chapter 130, section 27A.

Two additional pieces of legislation allow the Commissioner of Natural Resources, after a public hearing to issue orders against altering coastal wetlands in order to promote public safety, health and welfare, and to protect public and private

property, wildlife and marine fisheries (Chapter 130, section 105A). Private owners of land placed under such orders may petition the superior court that the order constitutes a taking without compensation. If the court holds this to be true, the Commissioner may take the fee or any lesser interest in such land by eminent domain. The actions authorized above may not restrict or impair the lawful powers and duties of the Department of Public Works, the State Reclamation Board or mosquito control projects.

Similar legislation, Chapter 131, section 40A, was passed to promote public safety, health and welfare, and to protect public and private property, wildlife, fisheries, water resources, flood plain areas and agriculture on inland wetland areas. The Commissioner can issue orders on marshes or swamps bordering on inland waters or that portion of any bank which touches any inland waters, or any marshes or swamps subject to flooding by freshwater. A landowner may object to such an order, negotiate with the Commissioner, seek its removal, or obtain payment for any interest in the land the Commissioner may choose to take. Flood plains may be zoned under Section 2 of Chapter 40A.

DRAINAGE

Section 27A of Chapter 130, and section 40 of Chapter 131 state that no person shall remove, fill or dredge any bank, flat, marsh, meadow or swamp bordering on any coastal or inland waters without filing notice and complying with the prescribed regulatory procedures. To the extent that drainage usually involves the removal or dredging of such areas, drainage is regulated by these General Laws. The implementation of this legislation is administered by the Division of Conservation Services of the Department of Natural Resources. These sections of law do not apply to mosquito control work authorized under Chapter 40 of the General Laws, and do not control the activities of the State Reclamation Board. In addition, inland areas used for agriculture may be improved for these purposes without compliance with Chapter 131.

The improvement of lowlands through drainage is specifically covered by Chapter 252 of the General Laws, which deals with the flowage or drainage of lowlands, the removal of stream obstructions affecting lowlands and the eradication of mosquitoes. It sets up the State Reclamation Board, authorizes the formation of reclamation districts and the methods of financing projects.

IRRIGATION

The Commonwealth does not sponsor or specifically regulate irrigation projects. Private enterprise, operating within the riparian doctrine, and the General Laws covering mills, dams and

reservoirs (Chapter 253), provides storage and transmission facilities needed for irrigation. The U. S. Soil Conservation Service State Office estimates that 48,254 acres receive sprinkler irrigation and 770 acres are irrigated by gravity flow. Major users of irrigation are market gardens and tobacco and cranberry growers. The use of irrigation by golf courses and ski-areas (snow-making) is expected to increase substantially.

CONTROL OF EROSION AND SEDIMENTATION

The preamble to the act establishing the Water Resources Commission lists the prevention of erosion and sedimentation as primary purposes for the agency's creation. The Water Resources Commission through its Division of Water Resources has supervisory responsibility over programs provided for by the Watershed Protection and Flood Prevention Act (Public Law 566). Through the supervision of these programs, the Division of Water Resources has become involved in promoting land treatment and structural measures to control erosion and sedimentation. The Division of Waterways is involved in the control of beach erosion through the installation of rip rap materials, bulkheads, jetties and groins. The Division of Marine Fisheries, by way of its involvement with the coastal wetlands act, reviews the installation of such control measures. The Division of Waterways alters the effects of sedimentation through its stream clearance and channel dredging projects.

Erosion and sedimentation problems are not widespread in Massachusetts. Approximately 70 percent of the State has a forest cover, and erosion tends to occur only in those few local areas subject to poor farming practices, highway or similar construction or in coastal areas subject to wind and wave action.

RESERVOIR SITES*

Acquisition. The Division of Water Resources has purchased fifteen (15) reservoir sites needed in the Public Law 566 program during the past seven years. The Division is also in the process of identifying all potential reservoir sites in the Commonwealth as a part of a cooperative program with the U. S. Soil Conservation Service. This Type IV comprehensive study will identify all sites capable of impounding ten or more surface acres of water with watersheds exceeding one-half square mile.

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* See also IV - PROGRAMS - Planning, and Construction and Development, supra.

The Metropolitan District Commission has purchased and developed three basic reservoir systems, the Sudbury, Wachusett, and Quabbin systems. The latter two are still fully used as water supplies, while the former system has been largely converted to water-based recreation use. Virtually every city and large town outside the M.D.C. system has developed reservoir sites or acquired natural ponds.

In addition, many sites were pre-empted for industrial use during the nineteenth century. Many of these reservoirs are no longer used by industry and have fallen into disrepair, or have been converted to recreational use.

The Division of Water Resources was allotted 5 million dollars by Chapter 767 of the Acts of 1970 to buy future reservoir sites. Multiple use reservoirs in connection with Federal flood control projects have been developed, but few wholly State-funded single purpose recreation lakes have been constructed in the last decade.

Private enterprise has, however, purchased sites and constructed several lakes in order to provide sub-divisions for vacation homes. Many small reservoir sites have been and will be purchased and developed for day-use recreation and for irrigation purposes. At least two pumped storage reservoirs for power generation will be constructed by private power companies.

While no large scale program for acquiring potential reservoir sites has as yet been implemented, the water development possibilities of land tracts are considered when land is purchased by the Divisions of Fisheries and Game and Forests and Parks.

V - PROJECTIONS

POLICY AND PROGRAM TRENDS

Needless to say, policies and programs can be implemented only to the extent that enabling legislation and funding is provided. The Division of Water Resources does, however, believe that water resource needs will require that the following trends will inevitably continue or develop:

a. The total management of water and related land resources in the State will be placed under the control of one "lead" agency.

b. Water resources management will have as its foundation a well-conceived, comprehensive, interrelated and coordinated planning program, using computerized systems analysis techniques.

c. As water demands outstrip available supplies, legislation modifying the riparian doctrine and providing for the allocation of the available water resources will be enacted.

d. Greater emphasis will be placed on multiple use and reuse of water resources.

e. Institutional structures based on watersheds will operate as functional units, and/or as advisory groups.

f. A program of early acquisition of reservoir sites will be implemented.

FINANCING FUTURE DEVELOPMENTS

	Fiscal 1970 Budged Request	Fiscal 1980
Division of Water Resources		
Water Resources Planning	$ 479,899.00	$ 1,250,000.00
Operations - (P.L. 566, Flood Control Commissions, etc.)	1,151,306.00	2,000,000.00
Administration	190,412.00	550,000.00
Division of Water Pollution Control		
Operations - (Construction grants, local aid, L.F.A., etc.)	15,420,000.00	20,000,000.00
Administration (Law Enforcement, surveys, etc.)	848,605.00	1,600,000.00
Research and Development	800,000.00	1,600,000.00

Metropolitan District Commission		
Water (supply) Division	8,560,823.00	16,000,000.00
Public Access Board	500,000.00	500,000.00

The 1970 figures represent requests which may or may not be granted. They also include pro-rated portions of the bond issue funds which will be available during the year. Bond issues in the following amounts have been granted:

Division of Water Resources For Small Watershed Program (Since 1960)	$14,570,000.00
Division of Water Pollution Control Clean Waters Bond Issue of 1967	$15,000,000.00
Metropolitan District Commission Northfield Mountain Diversion Bond Issue	$25,000,000.00

The 1980 projections are subjective estimates by the staffs of the various agencies.

APPENDIX - WATER MANAGEMENT
PROBLEM AND RECOMMENDED SOLUTIONS

WATER SUPPLY

Legal and institutional changes will be needed before the type of effective watershed management required to satisfy even short range water needs can be achieved. A single State agency should be given the pre-eminent role in water supply planning and implementation. Legal barriers to intra- and inter-state water diversions must be overcome as metropolitan areas will continue to outgrow local sources. Greater public tolerance to the use of waters previously used for recreation or for the disposal of treated wastes will have to be developed in order that major rivers can serve as water supply sources. Important needs will be satisfied if the use of the Connecticut and Merrimack rivers for water supply purposes can be vastly increased.

Industrial use of water will present an increasing threat of thermal pollution as cooling water demands will grow tremendously. The development of improved heat dissipation systems will be needed if fisheries values are to be maintained. Until such time as improved cooling technology is devised, acceptable sites for steam electric plants will be difficult to find.

It is not anticipated that agricultural use of water will greatly increase, as the role of agriculture in the Commonwealth is declining in the face of increased urbanization, although irrigation water for turf maintenance and snow making will increase.

WATER QUALITY CONTROL

There are many municipal and industrial secondary waste water treatment plants to be built. In some cases, nutrient removal facilities are also needed. Serious construction delays may result from the unavailability of authorized Federal funds. Additional State funding will also be required.

A research and demonstration program to develop new methods of nutrient removal is vitally needed to prevent the further eutrophication of our inland waters. Methods of handling combined sewer discharges will also have to be found.

The storage of water for flow augmentation may become a common use of impoundments in order to provide the dilution volumes needed by waste treatment plants on those streams subject to low flows. State regulation of dams to prevent withholding of these augmented flows may be required. The current public view is that flow augmentation should be viewed only as

a last resort measure, after all known means of treatment have been found wanting.

FLOOD CONTROL

Upon the completion of currently authorized comprehensive studies, solutions to many major flood control problems will be identified. Currently authorized projects and several others identified in Type II and Type III studies can deal with major downstream areas. Potential Small Watershed Flood Prevention Projects will be identified by a Statewide Type IV water resources study currently in progress.

State-municipal stream clearance projects aimed at specific local damage reduction will continue, but will not be a major consideration in the over-all flood control program of the Commonwealth. The protection of flood prone inland wetlands will become a major non-structural flood control measure. The passage of legislation setting up procedures for the designation and protection of coastal and inland wetlands will require many years to fully implement, as boundaries will have to be precisely established, owners notified and, in some cases, land damages established.

In response to public demand, much greater emphasis should be placed on non-structural approaches to flood control.

RECREATION

Currently accepted water quality standards when implemented will help satisfy water-based recreational needs. The existing "D" classification set for the Blackstone and Otter Rivers should, however, be upgraded as soon as technically possible. Public demand also indicates that several streams in the "C" classification do not satisfy the local and regional needs. Sections of the Ware, Millers, and Nashua Rivers are examples of streams in this category.

Expanded use of water supplies for water-based recreation is a necessity, because of the extraordinarily low-level of reservoir use presently permitted in the Commonwealth. Current thinking tends to emphasize the negative public health impact of recreational use of water supplies, while ignoring the positive health values which could accrue from increased recreational opportunities. Swimming, boating, and fishing would become acceptable uses of water supplies if complete water treatment facilities were considered as a necessary feature in most surface water supply systems. A method by which the cost of additional treatment could be charged to recreation rather than the water supply agency might hasten the acceptance of this concept.

Boating, fishing, general recreation, and aesthetic values

would be enhanced by increased stream flows during the summer months in general, and on weekends in particular. Flow augmentation obtained by providing upstream storage, and regulation of existing power and process water impoundments would provide the sustained flows needed for recreationists. Inclusion of all power dams under Federal Power Commission licenses with provisions for maintenance of specific continuous flows is recommended.

While there is very little likelihood that significant areas in this State will, in the future, be devoted exclusively to forestry or watershed management, all land should be managed with the knowledge that it has watershed functions. Whether land is important for its relationship to water supply or to flood control, its auxiliary values for wildlife, visual aesthetics, recreation, forestry, and agriculture should be given full recognition in a program based on ecological considerations as well as economics.

As both agriculture and commercial forestry lose out in the economic race for space, it is desirable that there be a method devised to maintain a desirable mix of farm and forest types in our landscape. Whether the most fruitful approach involves accelerated land acquisition by the State and Federal governments, by the assumption of zoning powers by the State or by incentive payments to owners has not been ascertained. To a very limited and ineffective degree, a mix of these approaches exists in the Commonwealth today.

NAVIGATION

The following rivers in Massachusetts are designated as navigable by the U. S. Army Corps of Engineers: Connecticut, Merrimack, Boston Harbor complex (Mystic, Malden, Chelsea, Charles, Neponset, Town, Weymouth Fore, Weymouth Back, and Weir), Acushnet (estuary), and the Taunton. Massachusetts law recognizes streams as navigable below the ebb and flow of the tides. However, other streams may be navigable in fact, if they have a continued use for the passage of boats or other craft for business, convenience, or pleasure. Streams in this category have not been delineated to any great degree. Consequently there is a basic need for a statutory definition or identification of "navigable streams" in the Commonwealth to determine public rights in these areas.

Other navigational needs in Massachusetts include additional small boats navigation improvements, such as harbor enlargement or protection, channel dredging, etc., to accommodate the rapid increase in recreational boating activity. The Connecticut River could be made navigable to small boats throughout its length in Massachusetts, with access to Long Island Sound.

Other necessary proposed major navigation projects include

deepening the Cape Cod Canal to permit the passage of deeper draft vessels; removing and eliminating debris and dilapidated structures from Boston Harbor; improving the access and dredging the interior channels to Pleasant Bay in Chatham to provide a harbor of refuge and to improve recreational boating possibilities; and deepening and improving the Taunton River for commercial navigational purposes.

HYDRO-POWER

A study completed in 1967 of the power needs of New England concluded that present planned construction will supply power needs through 1972. Included in the construction program will be the completion of the pumped storage hydroelectric facility at Northfield Mountain in Erving. The facility, which will have a generating capability of one million kilowatts will be installed at an estimated total cost of seventy million dollars. Annual operating and maintenance costs were estimated at one hundred and twenty-five thousand dollars. Water from the Connecticut River will be pumped weekends, a mile and a quarter through a thirty-one-foot diameter shaft, up to a 300-acre, 5-1/2 billion gallon reservoir which will be created on Northfield Mountain. Reversible pump turbines will generate electricity during peak daytime hours as the water is returned through the shaft to the river.

Subsequent to 1972, future demands for electricity in Massachusetts will be met by the construction of a network of nuclear and pumped storage hydroelectric generating facilities. This will include the construction in 1984 of a 500-megawatt pumped storage unit in Northwest Massachusetts. Planning for this project has resulted in the Bear Swamp proposal on the Deerfield River in the towns of Florida and Rowe. The project, costing an estimated forty-seven million dollars, will be designed to produce 610 megawatts of electricity. An upper reservoir of 120 acres will be constructed at Bear Swamp and a 150 acre lower reservoir will be formed by the installation of 130-foot high dam across the Deerfield River.

In addition to the Bear Swamp proposal, a one million kilowatt pumped storage unit is tentatively scheduled to be constructed in 1989 in Southwestern Massachusetts. Installation cost is estimated at seventy-five million dollars, and annual operating costs of this facility are estimated at four hundred thousand dollars.

A long range solution to the Commonwealth's power needs lies in the development of more efficient thermal electric generating systems. Improved systems, by producing less waste heat and by having less water demanding heat dissipation systems, will lower the enormous projected demand for cooling water.

Public opposition to the siting of both steam generation and pumped storage projects is rising. One of the most commonly heard contentions is that more attention should be given to constraining future power demand. This is perhaps too philosophical a question for this type of study to entertain, but it should be acknowledged that a plan based upon optimums might not be similar to one based on logical projections.

All phases of this study sought to satisfy projected needs, and thus the study bears the seeds of dissatisfaction for those who hold that ecological considerations should be a demand limiting factor.

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FIGURE S-1(MASS)

MASSACHUSETTS STATE GOVERNMENT EMPHASIZING AGENCIES WITH WATER AND RELATED LAND RESOURCE RESPONSIBILITIES

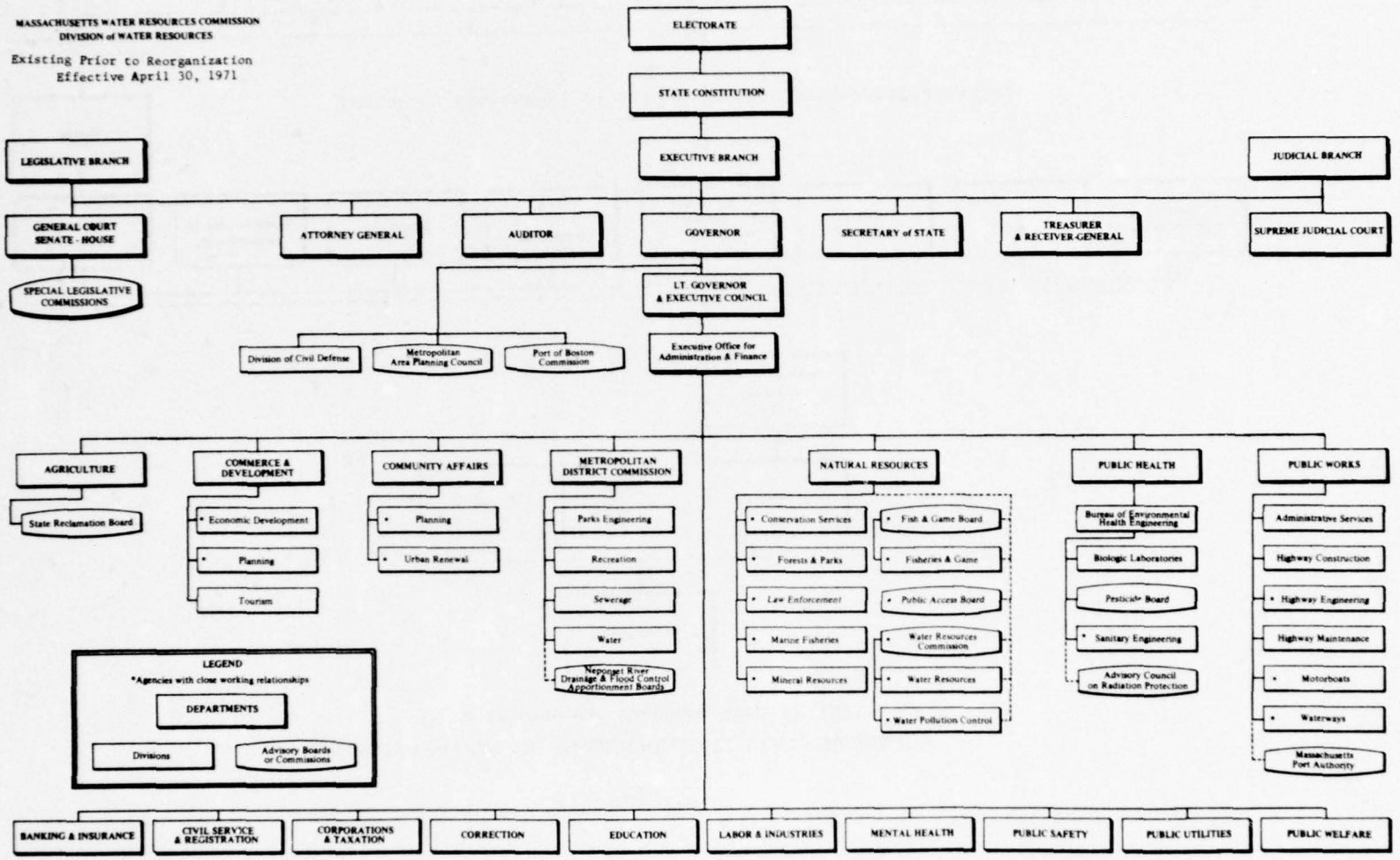
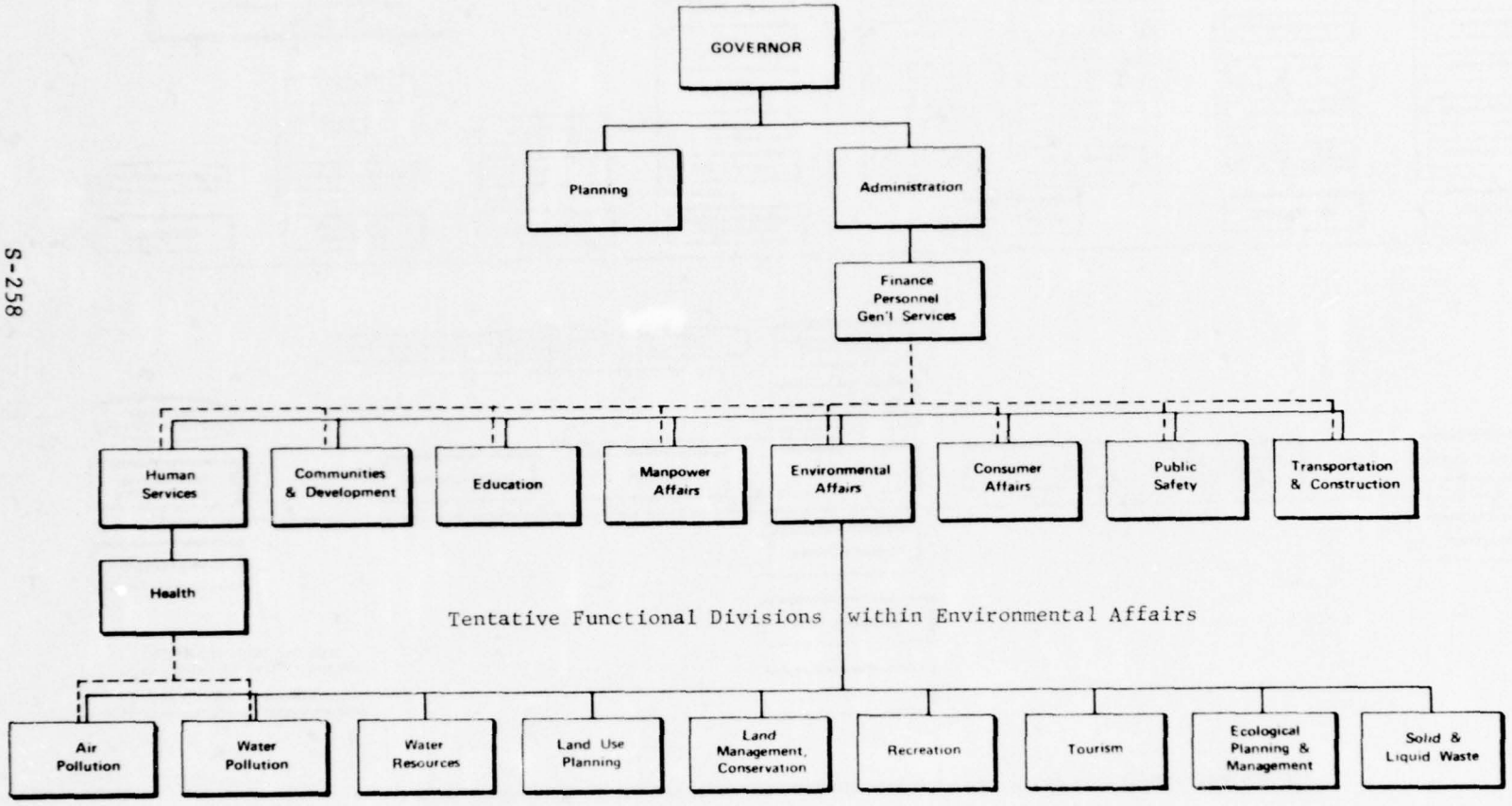


FIGURE S-2(MASS)

ORGANIZATION OF MASSACHUSETTS STATE AGENCIES
To Be Implemented Beginning April 30, 1971



STATE OF RHODE ISLAND AND

PROVIDENCE PLANTATIONS

Prepared by

Rhode Island Water Resources Board
Providence, Rhode Island
January 1971

STATE OF RHODE ISLAND
AND PROVIDENCE PLANTATIONS
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I - INTRODUCTION

Any attempt to reconcile the various alternatives presented in the planning process must live within the area of existing legislation or definite recommendations must be made to improve the laws. It is imperative therefore that a clear recognition of the existing laws and the original reasons for their present limitations be recognized. This compendium of the historical, legal, and legislative environment of the water and related land resources of the State of Rhode Island is presented with this in mind.

This report, prepared by the State of Rhode Island Water Resources Board, is presented as part of Appendix "S" of the North Atlantic Regional Water Resources Study. In abstract it furnishes a broad general overview of the legal and institutional environment of Rhode Island in the study of water and related land resources. Legal research aides, under staff direction, were employed in compiling much of the data used.

STATE OF RHODE ISLAND AND
PROVIDENCE PLANTATIONS

II- STATE LAW

SYNOPSIS

State Constitution. While the numerous articles of the Constitution of the State of Rhode Island and Providence Plantations do not contain specific statements of principle related to its land and water resources, the Constitution does embody indirectly the needs by reference of related matters since all lands are directly related to water resources and conversely all waters are directly related to the use of the land. Refer to Appendix A for a listing of the articles and sections to the Constitution.

Statutes. The legislative power of the State of Rhode Island and Providence Plantations is the General Assembly, vested in two houses, the Senate and the House of Representatives. Article IV of the State Constitution authorized this body to enact new laws and defines the methods and procedures of enactment. As a result some 2900 additional laws were approved by the General Assembly to the year 1951. During 1951 the General Assembly passed an act to consolidate the general and public laws of the State. Up to 1956 these 2900 chapters were contained within a single volume. The General Laws of 1956 represents the compilations of the many statutes enacted by the General Assembly and represents a change in the numbering system.

The General Laws of 1956 is an eight volume edition, as contrasted to the previous single volume, incorporating a title number, with a chapter number and a section number. The eight volumes contain 47 main headings or titles, all arranged alphabetically. Thus, a reference to 46-15-1 refers to section 1 of chapter 15 of Title 46. Historical notes are given for each section which trace the history of the section back to its origin or to the general laws of 1896, and compile and commission notes which point to changes in the text made in the compilation process. Comparative legislation in Massachusetts and Connecticut is cited and reference to related material in the American Law Reports is included. Each of the eight volumes includes a pocket to receive an annual supplement which includes all new permanent or general laws, all encumberances of laws, notations as to laws repealed or suspended, and notes on decisions on the validity of laws.

An indication of the impact of water and related land resources on the people of the State is shown by the extent of the various chapters of Title 46 of the Public Laws of 1956 entitled "Water and Navigation." A further indication of the feelings of the people in this regard may be obtained from the various legislative intents

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and declarations. Typical paragraphs follow.

Article 1 of Section 17 of the Constitution adopted by the people in 1842 reads as follows:

> "The people shall continue to enjoy and freely exercise all the rights of fishery, and the privileges of the shore, to which they have been heretofore entitled under the charter and usages of the State. But no new right is intended to be granted, nor any existing right impaired, by this declaration."

During the January Session, 1969, Resolution S274, "An Act to Approve and Publish and Submit to the Electors, a Proposition of Amendment to the Constitution of the State Relative to the Preservation, Regeneration and Restoration of the Natural Environment of the State (Conservation and Resource Planning)", was submitted and approved by the legislature and voted on by the electorate for the second time during the general election of November, 1970, when it was successfully passed. The additional language in the amendment guarantees that the preservation of all the natural resources of the State are the paramount concern of the General Assembly.

Title 2, Chapter 1 - Department of Natural Resources. 2-1-13: Public policy on coastal wetlands. "...Whereas, Article 1, section 17 of the Constitution of the State of Rhode Island and Providence Plantations guarantees to the people the free right of fishery, and Whereas, The free right of fishery cannot be enjoyed unless both finfish and shellfish are in aboundance to be caught, and Whereas, The metabolism and katabolism of plants and animals which constitutes the estuarine complex found in salt marshes furnishes the nitrates, phosphates, sugars, plankton and organic chemicals necessary for the nurture of finfish and shellfish throughout the Narragansett Bay area and its environs, and Whereas, The capacity of the salt marsh peat and muck substrate to absorb tidal flooding helps to obviate the hydraulics of severe flood conditions, and Whereas, All the salt marshes of this State are in jeopardy of despoliation by persons unmindful of the economic and aesthetic consequences of such spoilation, therefore, It is the public policy of this State to preserve the purity and integrity of the coastal wetlands of this State."

Chapter 4 - Soil Conservation. 2-4-1: Declaration of policy. "...It is declared that the farm and forest lands of the State of Rhode Island and Providence Plantations are among the basic assets of the State; that improper land use and forestry practices are causing these lands to deteriorate; that the consequences are serious and detrimental to the health, safety and general welfare of the people; that appropriate soil, moisture and forest conservation practices should be adopted; and it is declared to be the policy of the general assembly to provide for the conservation of soil, and soil and forest resources of this State and for the prevention and

control of soil erosion."

Title 32, Chapter 4 - Green Acres Land Acquisition. 32-4-2: Legislative declaration. "...The General Assembly hereby finds and declares that: Providing land for public recreation and the conservation of natural resources promotes the public health, prosperity and general welfare, and is a proper responsibility of government."

Title 42, Chapter 44 - Department of Community Affairs. 42-44-1: Legislative findings. "...The General Assembly finds and therefore declares that the health, welfare and prosperity of the people can best be advanced by strategic planning for coordinated utilization and economic development of all resources of the state to meet efficiently its present needs and to prepare properly to satisfy its future requirements. The General Assembly further finds and therefore declares that one of the most serious areas of present concern to the people of the State is the necessity of achieving quickly improvement in the quality of urban environment and in the living conditions of urban dwellers; that the persistence of poverty, unemployment and under-employment, educational deprivation, crime and delinquency, physical and mental illness, slums and blight, the insufficiency of improved housing, the inadequacy of community facilities and services, and the concentration of persons of low income within certain neighborhoods have resulted in a deterioration of the quality of the environment and in the manner and standards of living of large segments of the citizenry of the State, with attendant frustration of their ambitions, hope and aspirations; that these conditions have created a critical situation in our communities, elimination of which government must recognize as one of its most serious responsibilities."

Title 46, Chapter 3 - Shore Development. 46-3-2: Declaration of Purpose. "...Consistent with the legislative determination and declaration of State policy to protect and promote the health, safety and welfare of the people as heretofore set forth in chapter 3485 of the Public Laws of 1955, it is hereby declared to be the intention of the State, by co-operative means providing for the acquisition, by purchase or otherwise, of lands, or any rights, title, interest or estate in lands in beach areas vulnerable to storm damage, to assist municipalities in arresting, protecting, and preserving such beach areas from erosion and damage by the elements."

Title 46, Chapter 15 - Water Resources Board. 46-15-1: Legislative declaration. "...The General Assembly hereby finds and declares that:

"(a) The State of Rhode Island and Providence Plantations has been endowed with many and abundant sources of water supplies located advantageously, for the most part, throughout the State. The proper development, conservation and use of these water resources are essential to the health, safety and welfare of the

general public and to the continued growth and economic development of the State;

"(b) In order to retain and encourage the expansion of our present industries and to attract new industries and to promote the proper growth and desirable economic growth of the entire State, state government must play an active role in fostering and guiding the development of water resources."

Title 46, Chapter 21 - Blackstone Valley Sewer District. 46-21-2: Declaration of necessity for agency. "...Latest surveys of the waters of the State indicate that with the population growth and increased industrial activity in the Blackstone Valley, there has been a resultant increase in pollution, causing extensive damage to natural resources. Inability to properly cope with this problem by reason or wartime shortages and restrictions has magnified the problem to a degree which makes immediate action to abate pollution an urgent necessity."

Case Law. A number of Rhode Island cases have given definitive statements about the rights or riparians. One of the earliest statements was given by the Rhode Island Supreme Court in the case of Olney v. Fenner, 2 R. I. 211, 57 A. 711 (1852). The court in that case declared the rights of riparians to be as follows:

> Ordinarily the owner of land, bounding on the banks of a river, owns to the centre of the channel, and may claim as riparian proprietor to have the river flow by his land unobstructed and undiverted in its natural course, and without any material diminution.

The courts went one step further in the case of Silver Spring Bleaching and Dyeing Company v. The Wanskuck Company, 13 R.I. 611 (1882), stating that the rights of riparians were so annexed to and part of the land that even the legislature could not deprive a riparian of his rights without compensating him for the taking.

> The right of the riparian owner, be he farmer or mill owner, to have the water pass his land in its natural state, and to a certain use of it as it passes, not, however, injuring it for the use of others, is just as much his property as the land itself. This court cannot alter the law. Nor can the legislature take this right from him any more than it can take his land. If needed for public use, the State can take this right upon making compensation.

The court in Silver Spring also stated that the rights of reparians who were mill owners were not inferior to the rights of those riparians who were non-mill owners.

> The right of every owner of land bordering on a

stream to the use of the water is well settled; and the fact that he also owns a mill does not lessen those rights.

The doctrine of reasonable use applies, however, only when two or more riparians have a use for the water. This was one of the holdings of the Rhode Island Supreme Court in Dyer v. Cranston Print Works, 22 R.I. 506, 48 A. 791 (1901), in which the court held:

> The parties as riparian owners are tenants in common of the use of the water. Neither owns the water itself, and unless he has a use for it cannot exercise his right. If both have use for it, it must be equally divided; but if only one can use it, his use of the whole works no harm to his co-tenant.

The courts, however, will not allow a riparian to stop the flow of the stream or even to substantially diminish it. This was the issue in the case of Howe v. Norman, 13 R. I. 488 (1882). Defendant Norman claimed that he had the right to stop the flow of a stream because the spring which fed the stream was located on his land. The court rejected this argument when it stated:

> A river begins at its source where it comes to the surface, and the owner of the land on which it rises cannot monopolize all the water at the source so as to prevent its reaching the land of other proprietors lower down. The stoppage at the spring head is just as much a diversion as if the water had been taken lower down.

The court went on to say:

> ....to allow Norman, therefore, to intercept and appropriate it would be to allow him to deprive the complainant of a natural and immemorial privilege or easement appurtenant to her estate, and which is as much a part of her estate as the ground to which it appertains. At common law, of course, he had no right to do this.

WATER RIGHTS

Doctrine. The fundamental rule of water law in Rhode Island is the riparian doctrine.

Under the riparian doctrine the landowner has water rights or riparian rights by reason of the position of the land on the banks of a stream, lake or pond alone. As such, the land owner has the right of "reasonable use" of the water in the stream. Legally the landowner owns the land under the stream out to the middle or "thread of the stream". He does not own the water flowing in the stream but the right to the reasonable use of the water provided

its use is confined to the watershed of the stream and is returned to the stream essentially of the same quality with which it was withdrawn.

Surface water. The question of the ownership of surface water was settled in the case of Buffum v. Harris, 5 R.I. 243 (1858), where the Supreme Court stated that surface water on the land of one is not affected by any right of the owner of another estate. Therefore, the owner of land upon which surface water falls can appropriate it to his own purpose until it arrives at and is flowing into some natural channel already formed.

Rhode Island, however, has adopted the civil law rule which is set out in the case of Wakefield v. Newell, 12 R.I. 75 (1878). That case holds that the natural flow or passage of waters cannot be interrupted or prevented by the servient owner to the detriment or injury of the estate of the dominant proprietor unless the right to do so has been acquired by contract, grant, or prescription. Thus, as between the owners of higher and lower ground, the upper proprietor has an easement to have surface water flow naturally from his land onto the land of the lower proprietor and the lower proprietor does not have the right to obstruct its flow and cast the water back on the land above.

Groundwater. The use of these waters is regulated in Rhode Island by the English Rule that water which comes naturally upon the land belongs absolutely to the owner of the land and may be disposed of at his pleasure--even to the detriment of other land owners who were using this water.

Access to Lakes and Ponds. In Rhode Island, as in other states which follow the Common Law, the owner of the property which abuts a lake or pond has ownership to the center of that body of water. Their rights and duties in relation to one another are the same as those of riparian owners in a stream.

The only statutory legislation in this area is a statute which gives the Department of Natural Resources the power to regulate those private ponds or lakes which they stock with fish. The power is limited in its scope to: (1) ponds and lakes which are completely owned by one person, and (2) cases where the person owning the body of water has asked that it be stocked and has given his permission.

Diversion between basins. There is little in Rhode Island law concerning diversion of water from one basin to another.

Eminent domain. One method of exercising the right of eminent domain is described by the procedures outlined in Title 37-6-1, "Acquisition of Land," of the 1956 General Laws of Rhode Island. These sections establish the State Properties Committee and its

membership and defines its duties as follows, "....To act in co-operation with the departments, boards, bureaus, commissions and agencies of the State for the purpose of acquiring, administering and disposing of interests in land and other real property for the improvement of the administration of the State government, the advancement of commerce and the protection and improvement of the health, welfare and safety of the inhabitants of this State."

Certain other agencies have been given the power of eminent domain for certain specific purposes. These agencies do not follow the above procedure but follow a different procedure similar to that outlined for the Turnpike Authority and Highway as described below.

Title 24-12-10 thru 17, "Rhode Island Turnpike and Bridge Authority," outlines the method to acquire land by eminent domain. These chapters require the filing of a resolution stating that this acquisition is necessary for construction or operation. Within six months the authority must file in the land evidence records of city or town in which the property is located, a copy of this resolution together with a plat of the land and a statement by the chairman, that such lands are taken pursuant to the above mentioned chapter. The authority must also file a statement with the Superior Court of the sum of money considered to be just compensation for the taking with the Superior Court together with the depositing of that sum with the Court. After proper notice, persons agreeing with the sum mentioned in the filing, are paid from this deposited amount. Those not agreeing, may pray for an assessment of damages by a jury.

REGULATORY AUTHORITY

Rhode Island has a reputation of dealing with water and related land resources problems as they arise. This is an expressed intention to give the people and industry as much freedom of action as possible. Even when regulations become necessary, every effort is made to limit the area of regulation and inform the public and hear their presentations. This procedure is defined in Chapter 42-35, "Administrative Procedures Act," of the General Laws of 1956, as amended by Chapter 112 of the Public Laws of 1962.

Permits or Approvals Required.

(1) For drilling or abandoning wells. The construction of public groundwater supplies is regulated by the Division of Water Supply of the Department of Health as specified in Chapter 46-13 and 46-14 of the Public Laws of 1956 as amended.

In effect these statutes require the approval of plans for the development of the source and the construction and installation of auxiliary equipment. In the case of ground water, the approval of the source requires the acquisition or control of a minimum area of 400' radius (12 acres) around the well proper.

The Health Department analyzes, free of charge, any private water supply within the State and if found unsatisfactory will usually recommend corrective measures.

(2) For impoundments. The legal authority for the approval of impoundments rests with the Department of Natural Resources, Harbors and Rivers Division, by the authority conveyed in Chapter 46-18 entitled "Damages from Milldams," 46-18-1 thru 46-18-16, and Chapter 46-19-1 thru 46-19-18, "Inspection of Dams and Reservoirs". These sections define the authority and procedures of the Harbors and Rivers Division for the physical features of the impoundments. The design, construction and operation of an impoundment for water supply is within the jurisdiction of the Department of Health by reason of Chapter 46-13, "Public Drinking Water Supply," and Chapter 46-14, "Contamination of Drinking" of Title 46, "Waters and Navigation," of the Public Laws of 1956.

(3) Channel encroachments. Chapter 46-6-1, as amended in 1968, reads "General Duties of Director. ...the Director of Natural Resources shall have control and supervision of all the harbors and tidewaters of the State, for the preservation, development and improvement thereof and the provision of the interests of the State therein," and further in Chapter 46-1-2. Concerning care and supervision of harbors and tidewaters, "....the Director of Public Works shall have the general care and supervision of all the public harbors and tidewaters within the State, with authority to prosecute for and to cause to be removed all unauthorized obstructions and encroachments therein, and may cause such harbors and public waters to be surveyed and platted and may make such examinations and observations as he may deem necessary to protect and develop the rights and interests of the State in such harbors and public waters, and may employ such engineers and other service as may be necessary to this end."

Chapter 46-2, "Federal Navigation and Flood Control Projects", authorizes the Director of Natural Resources to apply to Congress for appropriations for protecting and improving any harbor in the State.

The procedure for establishing harbor lines within the tidal area of the bay is described in Chapter 46-4, "Platting and establishment of harbor lines ... Hearing."

(4) Developments in Flood Plains. The power to limit the use of land in flood prone areas is given to the various cities and towns in Chapter 45-24 - Zoning Ordinances, 45-24-1, Power of Councils - Scope of Ordinances. In addition, in Chapter 3485 or the Public Laws of 1955, "it is declared to be the intention of the State, by co-operative means providing for the acquisition, by purchase or otherwise, of lands, or any rights, title, interest or estate in lands in beach areas vulnerable to storm damage, to

assist municipalities in arresting, protecting, and preserving such beach areas from erosion and damage by the elements."

(5) Discharge of wastes. Chapter 23-1-1 of the General Laws of 1956 defines the duties of the Department of Health as follows:

> "General functions of Department - Prevention and control of disease ....The Department of Health shall take cognizance of the interests of life and health among the peoples of the State; shall make investigations into the causes of disease, the prevalence of epidemics and endemics among the people, the sources of mortality, the effect of localities, employements and all other conditions and circumstances on the public health, and do all in its power to ascertain the causes and the best means for the prevention and contol of diseases or conditions detrimental to the public health, and adopt proper and expedient measures to prevent and control such diseases and conditions in the State...."

Also, under Chapter 46-12-2:

> "Administration Board .... (a) It shall be the responsibility of the Director of Health to administer this chapter....", and further, under 46-12-3, "Powers and Duties of the Director, "....(b) to develop comprehensive programs for the prevention, control and abatement of new or existing pollution of the waters of this State."

(6) Construction of public water supply. Chapter 15 of Title 39, "Public Utilities and Carriers," defines the general powers of the various cities and towns to develop a water supply.

Regulations governing the construction and operation of public water systems are contained in Chapters 13, 14, and 15 of Title 46 of the Public Laws of 1956.

Chapter 13 concerns itself with the assurance of the safety of all drinking water supplies and requires that all new sources of supply and construction of treatment works shall have the approval of the Division of Water Supply in the Department of Health before proceeding. This Chapter also regulates the operation of various components of the supply system.

Chapter 14 establishes regulations concerning the prevention of pollution of drinking water sources and establishes procedures for the removal of polluting materials and provides for penalties.

Chapter 15 creates the Water Resources Board which limits the authority of existing municipal or private water systems to

developments within its own present system and requires the approval of the Board for additional sources of supply or extension of mains beyond its present boundaries.

Water Quality. The statutory authority for water quality improvement in the State of Rhode Island is stated in Chapter 46-12 and 46-14 of the General Laws of 1956, as amended. Chapter 46-12 is concerned with the water quality of those waters used for drinking, and Chapter 46-14 relates to the control of waters which are sources of drinking water supply.

Among the powers granted to the Director of Health is the authority to adopt, modify, repeal and promulgate (Chapter 23-1-13, General Functions of Department, 42-Health and Safety, 42-18, Creation of Health Department), after due notice and hearing, standards of quality, and to classify the water of the State accordingly.

(1) Waste treatment. In the discharge of waste treatment plant effluents to the receiving waters, cognizance shall be given both in time and distance to allow for mixing of effluent and stream. Such distance required for complete mixing shall not affect the water usage class adopted but shall be defined and controlled by the regulating authority.

(2) Flow regulation. The passage of the Mill Act of 1734 by King George II is said to have indicated the first example of governmental endorsement of the development of water resources for the public good. This policy had a great deal to do with the development of water power for the textile industry. As a result there were many impoundments created by the construction of dams: it has been estimated that more than 82 such impoundments were made. Many of the owners of these dams banded together and incorporated, receiving a charter from the legislature granting flowage rights of the stream.

III - ADMINISTRATIVE STRUCTURE

INTERSTATE

Rhode Island has representation and/or financial interest in the activities of the New England River Basins Commission, the New England Interstate Water Pollution Control Commission, the North Atlantic Regional Water Resources Study, the Northeastern United States Water Supply Study, the Atlantic States Marine Fisheries Compact, the Northeast Interstate Forest Fire Protection Compact, the New England Regional Action Planning Commission, and the Thames River Valley Flood Control Commission.

These agencies are designed to achieve a coordinated and comprehensive approach to the planning and development of Rhode Island's water and related land resources within a regional framework.

STATE DEPARTMENTS AND AGENCIES

Department of Administration. This is primarily a central management agency designed to provide services to other departments of State government. It is composed of the following divisions: (1) Personnel, (2) Accounts and Controls, (3) Methods, Data Processing and Central Services, (4) Budget, (5) Purchases, (6) Taxation, (7) Bureau of Audits, (8) Statewide Planning Group, and (9) Public Buildings.

Department of Transportation. This agency has the responsibility for all transportation planning, policies, and investment. It contains the following divisions: (1) Division of Administration, (2) Planning Division, (3) Public Works, (4) Maintenance Division, (5) Airports Division, and (6) Motor Vehicles. The State Pilotage Commission is within the Department, but independent; the Director of Transportation serves as an ex-officio member of this commission.

Department of Business Regulation. Combined in this single agency are a number of regulatory functions which include regulation of banking, public utilities, upholstering, real estate, and alcoholic beverages. The Division of Public Utilities is responsible for the regulation of all public utilities, including privately owned water companies and certain municipally chartered public water agencies.

Department of Natural Resources. This department operates through six divisions. The Division of Parks and Recreation administers and maintains the State's park system, including State beaches, roadside areas, and historical sites. The Division of Conservation administers the State program for the development of forest lands, including fire prevention, woodland management,

reforestation, fish restoration research, wildlife restoration, and research designed to increase water productivity and shellfishing activities. The Division of Agriculture is responsible, in general, for regulating farm-associated operations and for control of plant diseases and associated activities. The Division of Harbors and Rivers supervises the development and improvement of the harbors and tidewaters of Rhode Island, including the operation of State-owned piers, and issues permits for the construction of piers and wharves. Continuing cooperation with Federal agencies is maintained in studying flood control, stream flow, and hydrological changes. The Division of Planning and Development is responsible for the planning of most natural resources development within Rhode Island. The Division of Enforcement is responsible for the enforcement of all laws administered by the Department, including hunting and fishing, shellfish control, and the regulation of boat usage.

Department of Health. This agency has complete responsibility for public health activities within Rhode Island. Three assistant directors supervise the activities of the several divisions. Nine divisions are immediately responsible to the Director. The following three divisions are associated with water and related land resources: the Office of the Assistant Director for Environmental Health Services, the Division of Water Supply and Pollution Control, and the Division of Air Pollution Control.

Department of Community Affairs. This department is responsible for the preparation of a general plan to guide the State's municipalities toward achieving a coordinated, efficient and economical development of the State in accordance with the present and future needs and resources of the State.

OTHER AGENCIES AND COMMISSIONS

Those having a direct impact on the water and related land resources of Rhode Island are the Rhode Island Atomic Energy Commission, the Rhode Island Water Resources Board, the Commission on Interstate Cooperation, and the Rhode Island Bridge Authority.

SPECIAL PURPOSE DISTRICTS

Blackstone Valley Sewer District. This authority is responsible for the planning, construction, operation, and maintenance of appropriate facilities to abate pollution in the Blackstone Valley area. The program is financed by pledging of the credit of the State with appropriate provisions to ensure that said program may be self-liquidating.

Pawtuxet River Board. This agency has the responsibility of advancing the rehabilitation of the Pawtuxet Valley, and administering such grants as may be made by the Federal government for the payment of construction of such projects deemed to be advisable for the conservation of health, for the improvement of sanitation, for the

abatement of nuisances, for the elimination of soil erosion, for stream regulation and flood control, for reforestation, and for such other improvements as may be found necessary.

Conservation Commissions. Chapter 203 of Rhode Island Public Laws, 1960, gives the cities and towns the authority to create conservation commissions.

OTHER POLITICAL SUBDIVISIONS

Local government in Rhode Island is principally municipal, either through the adoption of a home rule charter, or through the enactment of a legislative charter by the General Assembly.

Special Purpose Districts. Certain areas within Rhode Island have established districts for the purpose of providing water supply and/or fire protection.

IV - POLICY

CENTRALIZATION OF RESPONSIBILITY FOR WATER MANAGEMENT FUNCTIONS

Generally, water management within the State of Rhode Island is the responsibility of local government. Centralization of management is illustrated in the area of water supply through the operations of the State Water Resources Board and the State Department of Health, and in the area of liquid waste disposal through the activities of the Division of Water Pollution Control. The Department of Natural Resources exercises selected centralized functions: e.g., recreation, harbors, rivers, etc.

HOME RULE

Article XXVIII of the Rhode Island Constitution, "Home Rule for Cities and Towns", states as its intention ". . . to grant and confirm to the people of every city and town in this State the right to self-government in all local matters."

FINANCING

The entire spectrum of methods for financing water projects is employed by various water-oriented agencies within Rhode Island: e.g., operating budgets, special legislative appropriation, general obligation bonds, revenue bonds, etc. Two constraints are of significance in considering project funding. First, there is a constitutional directive: ". . . Borrowing power of General Assembly . . . The General Assembly shall have no powers, hereafter, without the express consent of the people, to incur State debts to an amount exceeding fifty thousand dollars." Second, there is a statutory limitation on municipalities. ". . . Maximum aggregate indebtedness . . . Except as provided . . . no city or town shall, . . ., incur any debt for money hired which would increase its aggregate indebtedness . . . to an amount greater than three per cent (3%) of the taxable property of such city or town, ..."

COOPERATION, COORDINATION, AND COST SHARING

With Federal Programs. 42-41-1 of the General Laws of Rhode Island furnishes authorization to receive Federal grants, and outlines the procedure to be followed by the various State agencies for the reception, administration and expenditure of Federal funds.

In accordance with this statute, the Governor has designated the Rhode Island Water Resources Board to be the agency to administer a program for the comprehensive water and related land resources planning pursuant to Title III of the Water Resources

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Planning Act (P.L. 89-80). As such, the Water Resources Board receives an annual grant from the Water Resources Council for water resources planning, on a 50 percent matching basis.

Interstate. The General Manager of the State Water Resources Board is the Rhode Island representative in the North Atlantic Regional Water Resources Study, the Northeastern United States Water Supply Study, and the New England River Basins Commission.

Within the State. In conformance with the Federal Bureau of the Budget's Circular A-95, all requests for Federal aid from the eligible Rhode Island agencies must be filed with the Department of Community Affairs for review by the Rhode Island Statewide Planning Program.

RECENT CHANGES

In 1969, an addition to Chapter 46-15 of the Rhode Island General Laws, entitled "Water Resources Board", was enacted, reading as follows:

> 46-15-24. Water Development Fund. There is hereby created a special fund called the Water Development Fund . . . . Monies from this fund are hereby appropriate for the purposes authorized by 46-15-6 thereof exclusive of the acquisition of reservoir sites. 46-15-6 (g). To make loans to publicly owned water supply agencies for acquisition of land, construction, or installation of pipes. . . .

An amendment to Chapter 46-15 of the Rhode Island General Laws was enacted in 1970, enabling the Water Resources Board to issue Water Revenue Bonds. Under this amendment, the Water Resources Board ". . . as a body politic and corporate shall establish water supply facilities and lease to cities, towns. . . . Under the temporary borrowing provision the Board may . . . borrow money for the purposes of this Chapter in anticipation of revenue or Federal aid or in anticipation of the issue of bonds, and issue notes thereof."

During the 1970 legislative session, the Water Resources Board sought passage of a bill that would require well drillers operating within the State of Rhode Island to be licensed by the State through the Board. The bill, also sought the requirement that well drillers provide the Water Resources Board with copies of their logs on each well or test boring completed. This bill failed to receive legislative approval during 1970.

V - PROGRAMS

RESEARCH PROGRAMS

Numerous water and related land resources investigations and analyses are conducted by various departments at the University of Rhode Island, i.e., the School of Oceanography, the Water Research Center, the Department of Community Planning, etc.

DATA COLLECTION AND INTERPRETATION

The Rhode Island Water Resources Board has embarked on a program of collecting, tabulating and reporting all pertinent data concerning the water resources within and around the State of Rhode Island. Following the inventorying process, the resulting information is to be interpreted into a comprehensive plan for Rhode Island's water and related land resources.

Water Resources Planning Outline

Inventory of Water Resources Reports - Library - completed - February, 1969.

Inventory of Public Water Supply Systems - completed - February, 1971.

Inventory of Industrial Water Supply - in process.

Inventory of Waste Treatment Plants - in process.

Inventory of Industrial Waste Treatment - in process.

Inventory and Character of Rhode Island River Basins - completed - February, 1971.

Inventory and Character of Rhode Island's Lakes and Ponds - completed - April, 1970.

Land Use and Treatment - in process.

Fish and Wildlife Studies - in process.

Recreation Studies - in process.

Flood Control, Power, Irrigation - in process.

Narragansett Bay and Associated Areas - in coordination with affiliated study groups, i.e., Rhode Island Technical Committee on the Coastal Zone.

Legal and Legislative Aspects - Part I, "The Development of Basic Water Resource Laws and Policies in Rhode Island", and Part A, "State Laws" are complete - two additional supplementary publications are in process.

Financial Aspects of Water Resources - under consideration.

PLANNING

The Rhode Island Water Resources Board is developing a comprehensive plan for water and related land uses. The State-wide Planning Program has developed a comprehensive plan for "Public Sewerage Facility Development" and for "the Development and Use of Public Water Supplies."

With the exception of the planning element of the Water Resources Board, most planning within the State of Rhode Island is performed by one of the following institutions. The Statewide Land Use and Transportation agency is responsible for most State agency planning. The Department of Community Affairs is responsible for town planning and comprehensive reporting of State affairs. And, finally, planning at the city level is the responsibility of independent city planning agencies and/or of consultants.

CONSTRUCTION AND DEVELOPMENT

Flood Control. Within Rhode Island to date, flood control projects have been a joint effort of Federal, State and local government and citizens participation: e.g., the Fox Point Hurricane Barrier.

Water Supply. This is principally a local responsibility. In 1970, with the passage of Chapter 304 of the Public Laws of Rhode Island, the Water Resources Board Corporate was established with authority to issue revenue bonds, thereby enabling a state agency to engage in the actual construction of water supply facilities.

Water Quality Control. This, too, is principally a local matter, with sewage treatment plants established to serve a municipality. Regional facilities are beginning to receive more consideration, e.g., the Blackstone Regional Sewer District serving three cities and two towns.

Solid waste disposal is principally a local matter, either through land fill operations or incineration.

Navigation. The Department of Natural Resources through its various divisions operates a program to develop facilities for recreational navigation, i.e., boat launching sites, acquisition

of access sites.

General Recreation. The Department of Natural Resources, through its various divisions acquiries, develops and administers the State recreation areas. Local recreation areas have recently become more active through the State's Green Acres Program.

Fish and Wildlife. The Department of Natural Resources maintains an entire Division for the development and administration of the fish and wildlife of the State.

REGULATION

Water Use. The Rhode Island Water Resources Board has the responsibility for the proper development, conservation, and use of the State's water resources.

Water Quality. The Division of Water Supply and Pollution Control of the Department of Health is the responsible agency.

Construction. Building inspectors regulate construction at the local level. Permits for special purpose construction may be required by the Department of Health and/or the Department of Natural Resources. Plans for regional development of water supply facilities must receive the approval of the Water Resources Board.

Well Drilling. Licensing regulations are currently being considered, but at present this activity is entirely a private matter.

Channel Encroachments. The Department of Natural Resources has the responsibility of establishing harbor lines, as well as the authority to regulate the construction on and filling of tidal marshes.

Use of Flood Plains. This is a local matter regulated through municipal zoning ordinances.

VI - PROJECTIONS

POLICY AND PROGRAM TRENDS

The State of Rhode Island through its various departments, agencies, commissions, and boards will continue to emphasize cooperation and the coordination of activities leading to the improvement of water and related land resources. The trend most evident appears to be the emphasis on regionalization of management and operation of facilities. The Water Resources Board was established to coordinate water supply activities to provide for the optimum use of water resources for this purpose. The Blackstone Valley Sewer District was established to serve as a regional liquid waste treatment facility. The establishment of a Coastal Zone Agency, to manage the water resources of Narragansett Bay on a regional basis, is currently under consideration.

FINANCING FUTURE DEVELOPMENT

The financing of future development and/or the acceleration of such development seems to depend largely on solving the State's present fiscal crisis, and on the actions of the Federal government in funding its programs and/or in enacting a revenue sharing plan with the states.

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APPENDIX

CONSTITUTION

of the

STATE OF RHODE ISLAND

and

PROVIDENCE PLANTATIONS.

ARTICLE I.

Declaration of Rights

Section

1. Right of the people to make and alter their constitution.
2. Object of government - How laws should be made and burdens distributed.
3. Religious freedom secured.
4. Slavery prohibited.
5. Laws should provide remedies. - Justicce should be free, complete, prompt.
6. Rights of search and seizure regulated.
7. Provisions concerning criminal proceedings.
8. Bail, fines and punishments.
9. Bail and habeas corpus.
10. Rights of the accused in criminal proceedings.
11. Debtors entitled to relief.
12. No ex post facto law, etc., to be passed.
13. No man to criminate himself
14. Presumption of innocence.-- Accused to be secured with out severity.
15. Trial by jury.
16. Private property secured.
17. Rights of fishery.
18. Military subordinate. -- Martial law.
19. Of quartering soldiers.
20. Liberty of press secured.-- Truth as a defense to libels.
21. Right of people to assemble and petition.
22. Right to bear arms.
23. Rule of construction.

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ARTICLE II.

Electors.

Section

1. Of electors owning a real estate.

2. Of electors qualified to vote on adoption of constitution.--Registered voters--qualified by dollar tax--military duty. --Who to vote for city council in Providence, to impose a tax, etc.

3. Of assessment and payment of registry tax.

4. Who shall not gain residence, or be permitted to vote.

5. Residents on land ceded, etc., not electors.

6. Power of general assembly over elections.

ARTICLE III.

Powers Distributed.

Three departments.

ARTICLE IV.

Legislative Power.

Section

1. Constitution supreme law.

2. Two houses.--General assembly.--Style of laws.

3. Sessions of general assembly.

4. Members not to take fees, etc.

5. Members exempt from arrest, etc.

6. Powers of each house.-- Organization.

7. Powers to make rules, etc.

8. Of the journal, and yeas and nays.

9. Of adjournments.

10. Of powers not prohibited.

11. Pay of members.

12. Lotteries prohibited.

13. Debts not to be incurred.

14. Private or local appropriation.

15. Of valuations of property and assessments.

16. Officers may be continued until successors qualified.

17. Bills to create corporations to be continued, except, etc.

18. Of election of senators in congress.

ARTICLE V.

House of Representatives

Section

1. House, how constituted.-- Ratio of representation.

2. May elect its officers, etc.

ARTICLE VI.

Senate.

Section

1. How constituted.
2. Governor to preside.--When to vote in grand committee.
3. May elect presiding officer in case of vacancy, etc.
4. Secretary and other officers.

ARTICLE VII.

Executive.

Section

1. Of the governor and lieutenant-governor.--How elected.
2. Duty of governor.
3. He shall command military and naval forces, except, etc.
4. He may grant reprieves, etc.
5. He may fill vacancies.
6. He may adjourn assembly, in case, etc.
7. He may convene assembly, when, etc.
8. Commissions, how signed, etc.
9. Lieutenant-governor, when to act as governor.
10. Vacancies, how filled.
11. Compensation of governor, etc.
12. Duties of general officers.

ARTICLE VIII.

Elections.

Section

1. Governor and general officers, when elected.
2. General officers and members of assembly, how voted for.
3. Same subject.--How votes to be sealed up, transmitted and counted.
4. Lists of voters to be kept.
5. Ballots for members of assembly, how counted.--Adjournment of elections, when.
6. Of voting in the city of Providence.
7. If governor or lieutenant-governor not elected by people, grand committee to elect, how.
8. In case general officers not elected by people, how vacancies shall be filled.
9. Vacancies in assembly, how filled.
10. Majority required to elect.

ARTICLE IX.

Qualifications for Office

Section

1. Qualified electors only eligible.

Section

2. Conviction of bribery a disqualification.

3. Oath of general officers.

4. Officers, how engaged.

5. How oath to be administered to governor, etc.

6. Holding office under United States, or other government, a disqualification for certain offices, except, etc.

ARTICLE X

Judiciary.

Section

1. One supreme court.--Inferior courts, how established.

2. Jurisdiction of courts.--Chancery powers.

3. Judges of supreme court to instruct jury.--To give opinions, etc.

4. Of election and tenure of office of judges of supreme court.

5. Vacancies, how filled.

6. Compensation of judges.

7. Justices of the peace and wardens, how elected.--Their jurisdiction.

ARTICLE XI.

Impeachments.

Section

1. Impeachments, how ordered.

Section

2. Impeachments, how tried.

3. What officers liable to impeachment.--Effect of conviction.

ARTICLE XII.

Education.

Section

1. Duty of general assembly to promote schools, etc.

2. The permanent school fund.

3. Donations for support of schools.

4. Powers of general assembly under this article.

ARTICLE XIII.

Amendments.

Section

1. Amendments, how proposed--how voted upon--how adopted.

ARTICLE XIV.

Adoption of the Constitution

1. Constitution, when to go into operation.--Its effect on existing laws, charters, etc.

2. Former debts, etc., adopted.

3. Jurisdiction of supreme court.

4. Exemptions of New Shoreham and Jamestown from military duty, continued.

AMENDMENTS TO THE CONSTITUTION.

ARTICLE I.

Lists of voters for general officers no longer required to be kept, etc.

ARTICLE II.

The pardoning power, how exercised.

ARTICLE III.

Sessions of the general assembly.

ARTICLE IV.

Electors absent from the state in the military service of the United States, allowed to vote.

ARTICLE V.

Manufacture and sale of intoxicating liquors as a beverage prohibited.

ARTICLE VI.

Suffrage granted to foreign-born soldiers and sailors.

ARTICLE VII.

Suffrage granted to foreign-born citizens.

ARTICLE VIII.

Article V, Prohibitory Amendment repealed.

ARTICLE IX.

General assembly may provide for creation and control of corporations by general law; certain exceptions.

ARTICLE X.

Plurality instead of majority vote necessary for election of candidates at all state elections.

ARTICLE XI.

Session of general assembly to be held at Providence on first Tuesday in January, annually, etc.

ARTICLE XII.

Powers and duties of supreme and inferior courts.

ARTICLE XIII.

House, how constituted; ratio of representation.

ARTICLE XIV.

Lieutenant-governor to preside in senate.

ARTICLE XV.

Power of veto may be exercised by governor.

ARTICLE XVI.

General State election to be held biennially.

ARTICLE XVII.

More land and property than is needed for actual construction may be taken in fee by the state or any city or town.

ARTICLE XVIII.

Registration for voting, to extend over a biennial period.

ARTICLE XIX.

Senate, how constituted.

ARTICLE XX.

Qualifications necessary for right to vote; budget commissions, how created, etc.; registration period for voters.

ARTICLE XXI.

Qualified electors absent from the state, allowed to vote.

ARTICLE XXII.

Members of armed forces, etc., exempt from registration, allowed to vote.

ARTICLE XXIII.

Qualified electors absent from the State and those who are ill or infirm, allowed to vote. Article XXI repealed.

ARTICLE XXIV.

Narragansett Indians may become qualified electors.

ARTICLE XXV.

Permanent Registration.

ARTICLE XXVI.

Otherwise qualified, Veterans may participate in financial town meetings despite tax exemption.

ARTICLE XXVII.

Section 2 of Article VII of Amendments repealed; Poll Tax

ARTICLE XXVIII.

Home rule for cities and towns.

ARTICLE XXIX.

Permanent Registration. Article XXV of Amendments repealed.

ARTICLE XXX.

Otherwise qualified, Veterans, unremarried widow or parents of war casualty veteran may participate in financial town meetings despite tax exemption.

ARTICLE XXXI.

Borrowing power of the State is increased.

ARTICLE XXXII.

Off-street parking.

ARTICLE XXXIII.

Municipal redevelopment.

ARTICLE XXXIV.

General assembly authorized to enact legislation prescribing time, place, manner and extent of voting by absent and infirm qualified electors. Article XXIII repealed.

ARTICLE XXXV.

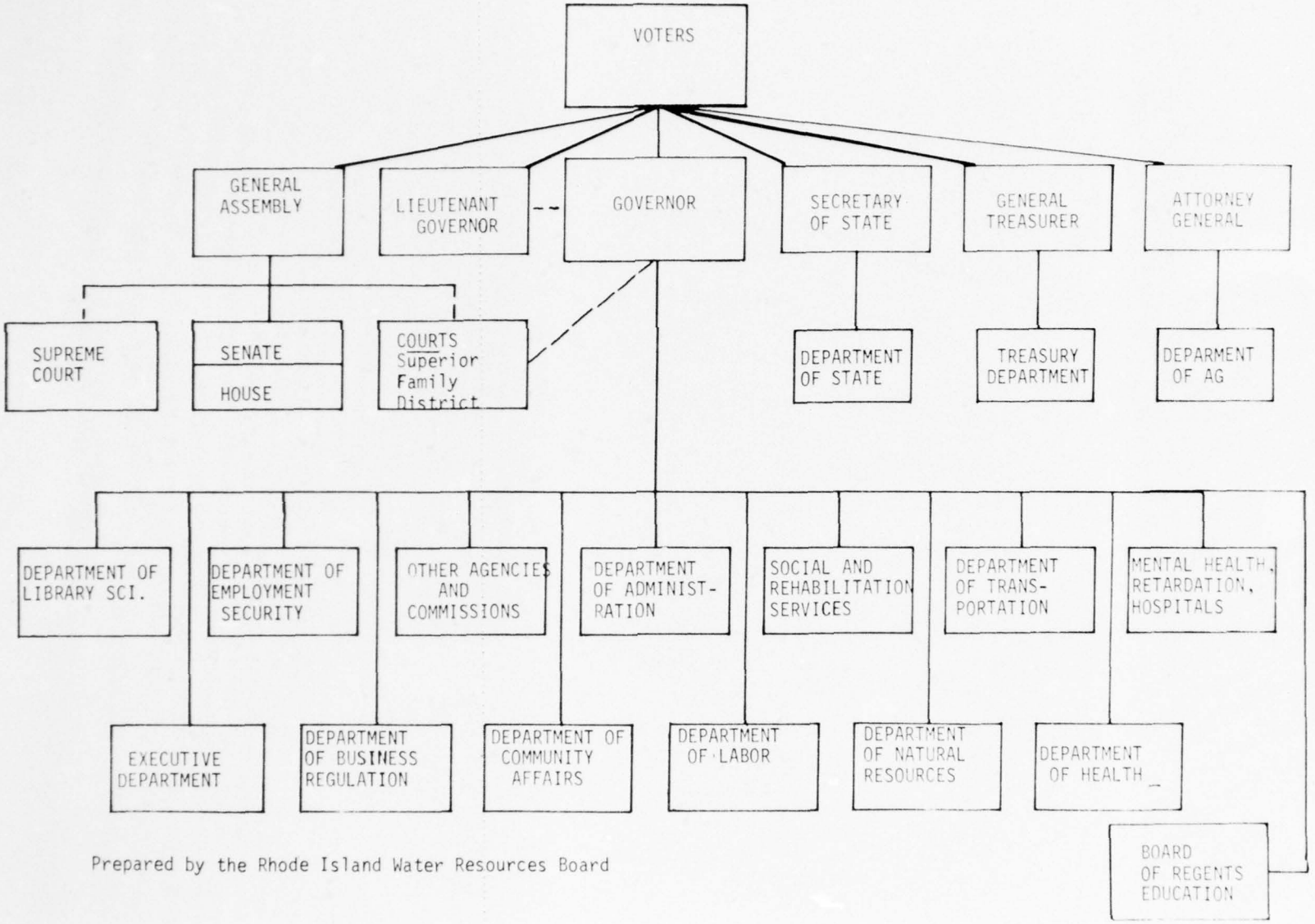
Biennial voter census of section 4, Article XXIX repealed. General assembly authorized to provide for canvassing voter lists.

ARTICLE XXXVI.

Continuity of government.

FIGURE S-1(R1)

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ORGANIZATIONAL CHART



Prepared by the Rhode Island Water Resources Board

STATE OF CONNECTICUT

Prepared by

State of Connecticut
Department of Agriculture and Natural Resources
Hartford, Connecticut

June 1970

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STATE OF CONNECTICUT

I - SELECTED STATE STATUTES RELATING TO WATER RESOURCES MANAGEMENT

GENERAL

In the area of common law, Connecticut is typical of New England States in utilizing the doctrine of riparian rights with regard to water in natural watercourses. This of course demonstrates the influence of historical tradition derived from medieval England which was both water-rich and with a legal tradition of slowly evolving common law. Over the last three centuries, a body of law based on court decisions has been developed. As might be expected, this body of law is essentially the same as that of neighboring states, and has been summarized by Clyde O. Fisher, Jr. ("Connecticut Law of Water Rights") and others.

However, primary emphasis in this discussion will be placed on those State Statutes which directly influence the management of Connecticut's water resources. Particular emphasis will be given to those statutes which are the responsibility of the State Water Resources Commission to enforce or carry out. They are described below according to major function.

FLOOD CONTROL AND PREVENTION OF FLOOD DAMAGES

Channel Encroachment Line Program. The Water Resources Commission has hearings and establishes encroachment lines beyond which in the direction of a waterway no obstruction to flood waters may be constructed without a permit. This program prevents the accumulated reduction in the flood carrying capacity of our waterways. As a supplement the statutes require that the Highway Department comply with this principle even at locations where encroachment lines have not yet been established.

Local Flood Control Projects. The State can enter into cooperative agreements with local communities to design and construct flood control projects under financial arrangements within the capability of communities.

Major Flood Control Projects. The Water Resources Commission is designated to act as the cooperating agency with the Army Engineers to accomplish the construction of larger flood control projects. Similar authority to work with the Soil Conservation Service has been given to the Department of Agriculture and Natural Resources.

Floodplain Information Program. The Water Resources Commission cooperates with the Army Engineers in the floodplain information program, involving preparation of floodplain reports on designated rivers or parts thereof.

DAM INSPECTION PROGRAM

The Water Resources Commission must review and grant permits on the safety of all existing or new dams, dikes, or similar structures.

SHORE EROSION PROJECTS PROGRAM

The Water Resources Commission is directed by statute to develop, plan, and construct in cooperative agreement local community projects to alleviate shore erosion.

CONTROL OF NAVIGABLE WATERS

The Water Resources Commission reviews all plans for structures or dredging in navigable waters and issues or denies permits on considerations outlined in the statutes.

EUTROPHICATION PROBLEMS

The Water Resources Commission also studies problems of algae and weed control and approves and helps to finance projects for alleviation.

STATE WATER RESOURCES PLANNING

The Water Resources Commission is also directed by statute to carry out a water resources inventory of the entire State and to cooperate in the development of a state plan for pollution abatement, water supply, and recreation (Interagency Water Resources Plan).

POLLUTION CONTROL

A new pollution control act passed in 1967 provides the authority to bring about the treatment of every discharge in the State to the degree that it is technologically feasible by the end of 1974. The facilities are being constructed to handle the anticipated increase in each discharge for a period of 20 years. The statute divides the existing problems into five categories.

First, the statutes outline the authority against any municipality causing pollution and it provides that instead of ordering a completed project, the Commission may order at least 7 steps leading to the placing in operation of proper facilities with a time schedule for the accomplishment of these steps. The State does not have to wait two or three years to bring action for non-compliance. The statute actually requires that the Commission ask for action by the Attorney General on any missed step. There are other features which provide a method of avoiding dead ends which were previously experienced. The Commission does not have to prove that a municipality itself is causing pollution. It only has to provide that a community pollution problem exists within that municipality or that such a community problem can be reasonably anticipated in the future. Another important dead end is avoided by giving the Commission authority to decide which municipality has the responsibility for abatement if the problem occurs within the geographical limits of more than one municipality. It can also issue Orders to two municipalities to jointly treat their wastes or require a municipality to provide capacity for a problem in a neighboring municipality. These powers enable the Commission not only to coordinate proper regionalization but to actually require it. The proper plan is determined in the engineering report and the plans and specifications and construction must be in conformance with this report to receive approval or the financial grants. The report itself is only approvable if it covers all the items which were set forth by the Commission in a pre-report conference with the engineer.

The second type of administrative problem is handled through the issuance of Orders to any private individual or corporation who was polluting at the time that the statute became effective and permits the State to require the accomplishment by scheduled steps.

The third type applies to situations which arise after the passage of the Act and requires that any new discharge, polluted or not, receive a permit. If the Commission finds, upon investigation, that the discharge would cause pollution then it must approve the proposed system of treatment. If a permit is denied the applicant has a right of court appeal, but he cannot discharge until a decision on the appeal is rendered. The permits are for a period of five years and are for a specific type of volume of discharge and assume the proper operation and maintenance. Against one who does not comply the action of the Commission is to enjoin the discharge rather than bring a violation action in a minor court.

The fourth type of administrative problem is covered by providing that the Commission shall periodically investigate those discharges which are operating under a permit and if it finds that the permitted facilities no longer insure against pollution, it may issue another Order against the previously permitted discharge.

There is a fifth type of administrative problem in pollution abatement referred to as accidental, seasonal, occasional, or incidental, which is difficult to act against because the situation generally does not exist when the action is finally brought to court. On the assumption that accidental discharges arise for a potential condition, the statute allows the Commission to issue an Order against any person who is maintaining a condition which can be reasonably expected to create pollution.

The statutes provide a bond issue of $250 million to provide a State grant of 30 percent to municipalities and to advance the Federal grant if monies are not available. The law also provides that no new discharge, even a clean discharge, can be established without a permit.

II - AGENCIES & ORGANIZATIONS PERFORMING ENVIRONMENTAL PLANNING, RESEARCH, AND REGULATORY FUNCTIONS

STATE AGENCIES

College of Agriculture - University of Connecticut. This institution helps promote orderly development of the State's resources through teaching, research (Storrs Agricultural Experiment Station), and extension work (Cooperative Agricultural Extension Service).

Connecticut Agricultural Experiment Station. This office carries out research to advance our knowledge of plants, their pests and environment and to apply this knowledge for the welfare of citizens, their plants, and their lands.

Connecticut Development Commission. This body collects, compiles, and disseminates information to the natural and economic resources of the State. Promotional efforts to strengthen the State's economy include encouragement of location of new business and industry in Connecticut, encouragement of vacation-travel business, and foreign trade, revitalization of Connecticut's marine commerce, and assistance to local communities and organizations.

Connecticut Transportation Department. This agency coordinates highway planning with area planning objectives and other State departments. In coordination with the Bureau of Public Roads it carries out roads beautification practices, and maintains liaison with the Connecticut Historical Commission in order to minimize damage to the historical heritage of Connecticut through highway construction.

Connecticut Historical Commission. This body studies and investigates historical sites and places and recommends their official marking and preservation. It is also authorized to set guidelines for establishment of historic districts and promote historic heritage of Connecticut, and has completed State-wide inventory of key historic landmarks and properties.

Office of State Planning. This office serves as a focal point for the preparation and sponsorship of a long-range statewide comprehensive plan to cope with the problems and exploit the opportunities of Connecticut's indicated growth and development. Basic to the operations of its planning program is the coordination of the planning activities of the State's planning regions, the individual department of State government, and related Federal agencies.

Department of Agriculture and Natural Resources. This agency coordinates the activities of a number of existing natural

resource-oriented agencies to provide a unified program of action for the conservation of Connecticut's natural resources. A major function assigned to the Council on Agriculture and Natural Resources (composed of the constituent agencies of the Department of Agriculture and Natural Resources plus the Connecticut Development Commission) is the administration of the State Open Space Grant-in-Aid Program.

Its major constituent agencies and their primary duties include:

Department of Agriculture: Promotes soil conservation in collaboration with the U.S. Soil Conservation Service through such mechanisms as the Soil and Water Conservation District Program and the Small Watershed Protection and Flood Prevention Program. Also promotes municipal conservation commissions and carries out functions relating to the production and marketing of the agricultural sector of the economy.

Park and Forest Commission: Performs functions relating to the development, operation, and maintenance of State-owned recreation areas. In addition, manages State forests, protects public and private woodlands, and provides technical and professional forestry services.

Board of Fisheries and Game: Manages the Fish and Game resources of the State including the restocking of such resources for recreational use through lease, purchase, and treatment of suitable game habitat, plus programs of law enforcement and information and education.

Water Resources Commission: Performs many important functions relating to the maintenance and control of water resources. Its functions include responsibility for flood control work and the establishment of channel encroachment lines, beach erosion control, inspection of dams and marinas, control of dredging activities, allocation of Federal funds for sewerage facilities, and pollution abatement.

Boating Safety Commission: Administers the State's boating safety program on both State waters and Federal waters within the State's jurisdiction. These responsibilities include registration of motorboats, encouragement of safe boating, and study and recommendations of boating facilities.

Shellfish Commission: Functions as a service to the public and industry in the administration of franchised, leased, and public shellfish areas, including supervision of activities and reviewing permits for dredging or construction within tidal areas.

Geological and Natural History Survey: Carries out mapping

of the surficial and bedrock geology of the State in cooperation with the U.S. Geological Survey. Also aids in the publication of other manuscripts of geological, botanical and zoological interest.

Wetlands Program: Regulates the use of and encourages the preservation of the State's tidal wetlands and estuarine systems.

Open Space Program: Provides Grants-in-Aid to assist Connecticut towns with the purchase of land and water for conservation and recreation. Also assists towns in the preparation of applications for Federal Open Space Grants.

Department of Health. This department serves as regulatory agency to control air pollution. It is also concerned with public health aspects of water pollution, including inspection of water supplies, sewage treatment plants, camps, and swimming areas, and regulates development utilizing septic tank systems.

INTERSTATE AGENCIES

New England Interstate Water Pollution Control Commission. This body carries out a coordinated interstate program for pollution abatement through classification of interstate rivers and establishment and acceptance of desirable standards which serve as guidelines to be followed by the States concerned.

Interstate Sanitation Commission. This commission serves as a tri-state compact between New York, New Jersey, and Connecticut, to control pollution in the harbors and coastal and tidal waters within the Interstate Sanitation District (including the Connecticut shoreline west of New Haven Harbor).

New England River Basins Commission. This body was established under the authority of the Water Resources Planning Act by President Johnson on September 6, 1967, at the request of the New England Governors' Conference.

In accordance with Title II of the Water Resources Planning Act the Commission shall:

(1) serve as the principal agency for the coordination of Federal, State, interstate, local and non-governmental plans for the development of water and related land resources in its river basin.

(2) prepare and keep up-to-date a comprehensive plan for public and private development of water and related resources.

(3) recommend long-range schedules for data collection, investi-

gation, planning and construction of projects.

(4) foster and undertake such studies of water and related land resources problems in its river basin as are necessary for preparation of the comprehensive plan.

New England Regional Commission. This agency functions as a cooperative Federal and State partnership primarily concerned with economic and social development of the six-state New England Region. Established under the provisions of Title V of the Public Works and Economic Development Act of 1965 (79 Stat. 552; 42 U.S.C. Sec 3121), the Commission is composed of the New England Governors and a Federal Cochairman appointed by the President. The statute empowers the Commission to undertake regional and technical assistance including planning and demonstration projects directed toward improving the conservation and utilization of human and natural resources. The Federal Cochairman, upon recommendation of the Commission, may furnish supplementary funds to pursue programs that are otherwise qualified for assistance under the provisions of various Federal grant acts where, because of local economic conditions, the full local matching share requirement can not be met. Among the Federal grant acts that may be supplemented by the Commission are the Federal Water Pollution Control Act, Watershed and Protection and Flood Prevention Act, and the Land and Water Conservation Fund Act of 1965.

Connecticut River Valley Flood Control Commission. This authority carries out the law of the Connecticut River Flood Control Compact made effective by the Congress and the States of Vermont, New Hampshire, Massachusetts and Connecticut, September 8, 1953. The functions of this Commission are to approve or disapprove new flood control impoundments, compute for reimbursement on an annual basis a certain percentage of the amount of taxes lost to the upstream states' political subdivisions for those lands acquired by the United States government for local and downstream flood protection, review and fairly award economic losses of a non-speculative nature suffered by property owners resulting from the construction of a flood control project, and carry out all other specified provisions of the compact with respect to both flood control alone and the utilization of the water resources of the Connecticut River Valley.

Thames River Valley Flood Control Commission. This body was established by compact in 1957 between the States of Connecticut, Rhode Island, and Massachusetts. Its powers and functions are similar to those of the Connecticut River Valley Commission described immediately above.

Atlantic States Marine Fisheries Compact. This agreement promotes the better utilization of the fisheries, marine, shell, and

anadromous, of the Atlantic seaboard by the development of a joint program for the promotion and protection of such fisheries, and by the prevention of the physical waste of the fisheries from any cause. It also has the "power to recommend to the states . . . . the stocking of the waters of such states with fish and fish eggs."

OTHER AGENCIES AND PROGRAMS

Soil and Water Conservation District Program. Financial and technical assistance is offered to the people of Connecticut for many types of conservation plans and actions with the involvement of locally elected County Supervisors. Services provided include planning, land acquisition, maintenance and operation of the various projects.

Regional Planning Agencies. Regional plans of development are originated and maintained by these agencies, which are involved in all aspects of regional planning including water supply (present and potential) sewerage, open space and recreation, and more general land use considerations.

Farmington River Watershed Association. This is a private organization of local citizens and groups dedicated to the wise use of natural resources of the Farmington Valley. Areas of concern include control of water pollution, provision of more recreation areas, flood protection, and conservation and preservation of the scenic beauty of the valley.

Connecticut River Watershed Council. The Council is a private organization dedicated to the promotion of the reservation and preservation of the Connecticut River Valley's water, land, and forest resources for the purposes of recreation, watershed protection, and fish and wildlife management. Also concerned with preservation of natural areas and retention of scenic values.

MISCELLANEOUS STUDIES AND PROGRAMS OF ENVIRONMENTAL INTEREST

Connecticut Comprehensive Statewide Outdoor Recreation Plan: 1965-1970. This plan was prepared with the assistance of the Land and Water Conservation Fund Act of 1965. The Plan's purpose was to propose a five-year program for action to provide outdoor recreation facilities of all types for the State of Connecticut.

The Green Land. This study was prepared as part of the Planning Phase of the Connecticut Interregional Planning Program and also to update the Connecticut Comprehensive Statewide Outdoor Recreation Plan. It discusses the broadly defined area of concern called "open space," including the functions of production, water resource management, preservation and environmental design. Key features include

discussion of open space goals and objectives and development of action recommendations.

Connecticut Statewide Outdoor Recreation Plan: 1968 Revision. This revision of the plan provides further updating of this plan with particular emphasis on needed action by area of responsibility and development of a priority system for evaluating such actions.

Coginchaug-Mattabesset River Study. This is a feasibility study to determine the need for the conservation, preservation and protection of the Coginchaug and Mattabesset River drainage systems and the optimum multi-use development of these natural resources.

The Scantic Valley. This comprehensive study is to determine the feasibility and suitability of creating a state park along the Scantic River, a major tributary of the Connecticut River. This park, if created, would provide much needed multi-purpose recreation in an area with a serious deficit of recreational opportunity.

Clean Water for Connecticut, An Action Program. This study provides four principal recommendations to clean up Connecticut's water over a seven year period:

(1) A $150 million bond issue to finance an accelerated program of waste treatment.

(2) A revision of State business taxes to encourage the treatment of industrial waste.

(3) A general review of all State laws and codes pertaining to water as well as a study of how these laws and codes can best be administered.

(4) A vigorous support of Federal pollution control legislation.

The Governor's Committee on Environmental Policy. This body is composed of a cross-section of Connecticut citizens called upon to consider a possible environmental policy for Connecticut which includes diagnosing the causes of and devising remedies for an environmental illness, including specific and comprehensive recommendations to achieve a quality environment.

Connecticut Inter-Agency Water Resource Study. The State's Departments of Health, Agriculture and Natural Resources, and Office of State Planning are conducting a water study of the State's water resources to determine the present and potential supply of and demand for water for recreational, domestic, and industrial and commercial uses.

Connecticut River Study. This study was undertaken to measure any environmental effects caused by thermal pollution from the

Connecticut Yankee Atomic Power Company nuclear power plant at Haddam Neck. A number of monitoring stations have been established and infra-red photography utilized to measure the effect of this heated discharge. Further studies have analyzed its impact on the resident and migratory aquatic fauna, especially on the valuable shad run.

STATE OF NEW YORK

Prepared by

New York State
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Division of Water Resources
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PURPOSE OF THIS REPORT

This report is presented as a New York State Supplement to the Planning Study now being carried on for the North Atlantic Region by the U. S. Army Corps of Engineers.

This report or compendium was first published in June, 1966 by the former Water Resources Commission. Concurrent with the establishment of the Department of Environmental Conservation on July 1, 1970, the Water Resources Commission was abolished and its duties were transferred to the new Department.

This compendium has, therefore, been revised and updated to include the changes brought about by the formation of the new Department and to bring up to date the status of various planning studies being carried out within New York State.

FOREWORD

The 1970 New York State Legislature passed and Governor Rockefeller signed into a law a bill that will have far-reaching effects in regard to present day environmental management. This law (Chapter 140 of the Laws of 1970) became effective July 1, 1970. Its primary purpose and objectives are to reorganize, unify, and strengthen the State's environmental protection and recreation programs by creating a new Department of Environmental Conservation, a Council of Environmental Advisers, a State Environmental Board and a new Office of Parks and Recreation in the Executive Department.

The primary functions, powers and duties of the new Department of Environmental Conservation include the following:

1. Coordinate policies, planning and programs related to the environment of the State.
2. Promote and coordinate management of water, land and air resources consistent with the environmental policy of the State.
3. Prepare an environmental plan for the future that establishes clear priorities.
4. Provide for the prevention and abatement of water, air and land pollution, including, but not limited to, that related to noise, particulates, gases, dust, vapors, radiation, odor, nutrients and heated liquids.
5. Promote sound practices for the use of agricultural land, river valleys, open land, and other areas of unique value.
6. Encourage the disposal of solid wastes.
7. Promote the control of weeds and aquatic growth.
8. Promote the control of pests and regulate the use, storage and disposal of pesticides.
9. Undertake scientific investigation and research on the ecological process and pollution prevention and abatement.
10. Monitor environmental conditions.
11. Initiate an extensive public information and education program to inform the public of environmental conservation principles and enlist help in programs.

The Commissioner of the Department of Environmental Conservation is authorized to adopt, amend or repeal any standards, rules or regulations required to carry out the purposes of this law except that any "basic environmental quality standard" proposed by the Commissioner will be subject to the approval of the State Environmental Board.

The bill provides for transfer of the following functions to

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the Department of Environmental Conservation:

1. The functions, powers and duties of the Conservation Department and Water Resources Commission, not related to parks and recreation.

2. The air pollution control, water pollution control and solid waste disposal functions, powers and duties of the Department of Health, Air Pollution Control Board, and Pesticide Control Board.

3. The pesticide control functions, powers and duties of the Department of Agriculture and Markets.

4. The functions, powers and duties of the Natural Beauty Commission.

The bill further provides for transfer to the Department of Environmental Conservation of related employees, appropriations, and records, and for continuity of authority, rules, regulations, rights and remedies relating to functions transferred.

The Conservation Department, Water Resources Commission, Air Pollution Control Board, Pesticide Control Board and the Natural Beauty Commission were all terminated as of July 1, 1970. The functions of each of these agencies are now being carried on by the new Department.

The Commissioner of the Department of Environmental Conservation is directed by the Act to prepare, or cause to be prepared, a codification of pertinent laws for submission to the Legislature by January 15, 1973. The Department is also directed to formulate a Statewide Environmental Plan by September 1, 1971.

The Coordinated Program for the Planning and Development of the Water Resources of New York State, as outlined in the following compendium, will be modified as needed in the future to conform with any new programs or changes in organizational structure of the Department of Environmental Conservation.

INTRODUCTION

The planning, development and management of water resources is a responsibility that must be shared by numerous agencies on all levels of government - local, county, State, and Federal.

The purpose of this compendium is to outline the administrative structure created by the State of New York to deal with these responsibilities. Appendix I outlines the history of New York's water resources development, while Appendix II cites the legal framework of the structure. Appendices III and IV outline the political subdivisions and special purpose districts dealing with water resources.

The major immediate goals of the State's water resources program are:

To provide the basis for enlightened management of the State's water resources through collection of basic data, scientific planning and equitable regulatory activities;

To evolve comprehensive plans for multipurpose development of the water and related land resources of each river basin and region of the State through regional and Federal-State partnership efforts;

To work as a partner with Federal agencies in formulating comprehensive plans that adequately reflect New York's interest in interstate river basins;

To coordinate with Federal, State, and local agencies and with private organizations relative to water resources planning, control, utilization, development and management to insure appropriate consideration of legitimate interests;

To implement regional plans for development of and to manage the water resources of the State for public beneficial purposes.

New York State has the legal and administrative framework to achieve competent planning for the development and utilization of its water resources. However, actual development is a responsibility that must be appropriately assumed and shared by all levels of government.

I - AGENCIES RESPONSIBLE FOR NEW YORK'S WATER RESOURCES

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

The new Department of Environmental Conservation was created to consolidate under one department various existing State programs involving the quality of the environment, water resources planning, development and management, and programs relating to air, land, and water pollution.

The functions and duties of the former Water Resources Commission were transferred to the new Department and these functions continue to be carried out primarily by personnel in the Division of Water Resources. The Department also continues to coordinate the functions of effected State agencies concerned with water resources planning, development and management.

Duties formerly under the jurisdiction of the Water Resources Commission, which are continued by the Department of Environmental Conservation, include the following: the planning, development and management of the State's water resources; undertaking studies on a regional basis, preferably with local participation, for the protection, conservation, development and use of water resources within any region of the State; the apportionement of water for public water supply systems; the investigation of the purity of public water supply systems and of the works constructed; the control of well drilling on Long Island; the licensing of certain public corporations for the diversion of certain water used in the generation of power; the classification of the waters of the State and the establishment of standards of quality and purity; the drainage of agricultural lands, primarily through districts set up for this purpose; river regulation and river improvement, through districts set up for these purposes; flood control and flood plain management; the protection of stream beds from disturbance; the control of dredging and fill in navigable waters; and the control of the construction of dams and docks. The Department also acts as the agent for the State of New York in partnership ventures with Federal and local entities and represents the State's interest in interstate water resources planning and development activities.

The basic functions, powers and duties of the Department and Commissioner relating directly to the abatement of air, land and water pollution have been outlined in the foreword to this compendium. The responsibility for carrying out the State's Pure Waters Program, as previously noted, has also been transferred from the Department of Health to the Department of Environmental Conservation.

The tentative structure of the Department is presently under

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review by a departmental task force created for this purpose. Although the new organizational structure has not been finalized, it is anticipated that the Department will be organized under three Deputy Commissioners having program responsibilities for:

(a) Environmental Quality

(b) Environmental Management

(c) Environmental Field Services

Under the general field of Environmental Quality will be included the various functions and activities of the Department of Health which have been transferred to the Department. These include all aspects of the program for pollution abatement under the Pure Waters Program, and various programs for air resources and solid wastes pollution.

Some of the specific activities which will be carried out in this office regarding water pollution include the following: enforcement of water pollution control laws; technical aspects relating to the establishment of standards of water purity for appropriate usage and for the classification and reclassification of bodies of water; review and approval of plans for sewage disposal systems; studies of municipal and intermunicipal sewage facilities; administration of programs of State grants to municipalities for the construction of sewage and waste treatment facilities; grants for the operation of these facilities and research in the treatment of sewage and industrial wastes.

It is anticipated at this time that all regional and district offices' activities will be coordinated through an Office of Environmental Field Services. It is also anticipated that a new unit will be set up to deal directly with urban affairs.

Under the general field of Environmental Management will be the former units in the old Conservation Department covering the areas of Fish and Wildlife, Lands and Forests, Mineral Resources, Marine Resources, and Water Resources.

It should be further noted that until the final structure of the Department is finalized, it is not known exactly how the major program areas and the staff services indicated above will be interrelated.

STATE ENVIRONMENTAL BOARD

Under the legislation which created the new Department of Environmental Conservation, a State Environmental Board was also

created within the Department. The Board consists of 15 members, as follows:

1. Commissioner of Environmental Conservation - Chairman
2. Commissioner of Health - Vice Chairman
3. Commissioner of Agriculture and Markets
4. Commissioner of Commerce
5. Commissioner of Transportation
6. Commissioner of Parks and Recreation
7. Commissioner of the Office for Local Government
8. Chairman of Public Service Commission
9. Industrial Commissioner

The membership is completed by six lay members which are appointed by the Governor with the advice and consent of the State Senate. Of these six members, one is a representative of the conservationists of the State, one of industry and four from the fields of public health, natural sciences, agriculture, urban studies or other disciplines relating to the environment, ecology or natural resource management. The Director of the Office of Planning Coordination and the Chairman of the Council are also entitled to attend and participate in the meetings of the Board, but have no vote.

The State Environmental Board assists the Commissioner of Environmental Conservation in the review and appraisal of programs and activities involving the quality of the environment and the Board also passes on every environmental standard, criterion and rule and regulation proposed by the Commissioner of Environmental Conservation. The Board also serves as a working forum for the exchanging of views, concerns, ideas and information relating to the quality of the environment.

The Board has an Executive Secretary and draws on staff services from the Department of Environmental Conservation.

COUNCIL OF ENVIRONMENTAL ADVISERS

The legislation creating the Department of Environmental Conservation, in addition to creating a State Environmental Board, further created a Council of Environmental Advisers which are to provide special counsel to the Governor on environmental policy matters affecting the State. The Council consists of seven members who are private citizens appointed by the Governor.

The primary function of the Council is to provide an overview in both the public and private sector in matters affecting the environment, to develop guidelines for weighing complex interrelationships between environmental quality, economic development and population growth, and to recommend State environmental policies,

including legislation.

ENVIRONMENTAL FACILITIES CORPORATION

Under legislation adopted in 1970 (Chapter 774-Laws of 1970) the State's Pure Waters Authority was expanded and reconstituted as the Environmental Facilities Corporation. The new corporation continues to offer all current services offered by the former Authority and will, in addition, be able to provide expanded services in several new areas.

The Corporation is a "Public Benefit Corporation" designed to assist municipalities and State agencies by providing needed facilities to abate air, water, and solid wastes pollution. The Corporation can provide a full range of services to a community, at the community's request, and at a reasonable fee, to plan, design, finance, construct, operate and maintain sewerage treatment plants, sanitary landfills or other desired waste-management facilities. The Corporation can also provide a construction-management service to community under a "turnkey" arrangement, whereby the project is turned back to the municipality for operation after construction by the Corporation.

Among the new capabilities which the Corporation can offer under the new legislation are the following:

1. Contract with municipalities, as well as State agencies, for the planning, financing and construction of water management facilities to include water treatment and transmission facilities for public water supply systems.

2. Provide a community, or State agency, with appropriate facilities, such as a park or golf course, on the site of a waste-management project, such as a sanitary landfill.

3. Contract to perform research and testing in waste-management for private businesses and industries.

The Commissioner of the Department of Environmental Conservation serves as Chairman of the Environmental Facilities Corporation. The Corporation also has a president and its own staff.

OFFICE OF PARKS AND RECREATION

Under the legislation establishing the Department of Environmental Conservation, the functions of the Division of Motor Boats and the Division of Parks in the Conservation Department were transferred to a new Office of Parks and Recreation in the Executive Department.

The State Council of Parks and Outdoor Recreation, the New York State Historical Trust, the Natural Heritage Trust, all regional State Park Commissions and the Saratoga Springs Commission continue in existence in the Office of Parks and Recreation.

Activities of the former Division of Motor Boats which were transferred to the new Office of Parks and Recreation include the establishment of standards for boating safety and sanitation, the inspection of public vessels, education regarding the use of motor boats, the review of local ordinances governing navigation on State waterways and a program of aid to counties for enforcement of the Navigation Law.

DEPARTMENT OF HEALTH

As was previously noted, the activities and jurisdiction of the Department of Health in the field of pollution abatement have been transferred to the Department of Environmental Conservation.

The Department of Health continues to have primary responsibility for the quality and control of public water supplies and for various aspects of environmental conservation involving public health. The Department, in cooperation with the Division of Water Resources, Department of Environmental Conservation, continues to review and approve plans for public water supply systems and initiates and coordinates studies for municipal and intermunicipal water supply facilities.

DEPARTMENT OF TRANSPORTATION

This Department, as a successor to the Department of Public Works, assumed responsibility for the improvement, operation and maintenance of the 524 mile State Canal System under Chapter 717 of the Laws of 1967. This includes the operation of 57 locks, dredging, repair of banks, maintenance of canal dams, reservoirs, aids for navigation and safety, and the regulation of the use of canals by pleasure craft and commercial vessels. This Barge Canal system, together with the Hudson River, links New York City with Lake Champlain and the Great Lakes.

The 1967 legislation, which terminated the Department of Public Works and created the Department of Transportation, transferred and assigned the functions, powers, obligations and duties of the former Superintendent of Public Works and the Department of Public Works pertaining to flood control and to shoreline and beach erosion control to the former Conservation Department. These functions, which are now under the jurisdiction of the Office of Central Engineering in the Department of Environmental Conservation, include activity in project land acquisition, negotiation and performance of work under local cooperation requirements and the furnishing of

assurances to the Federal government, preparation and administration of various contracts, and the operation and maintenance of constructed projects.

DEPARTMENT OF AGRICULTURE AND MARKETS

The Department of Agriculture and Markets has the responsibility of overseeing the production, processing and distribution of the State's agricultural products. Consequently, meeting present and future needs of farmers is of primary interest to the Department.

It estimates these needs, evaluates the benefits that will accrue if water is furnished for non-domestic use, such as irrigation, and estimates the repayment capacity of agricultural lands for supplemental water supplies.

DEPARTMENT OF LAW

The Department of Law's Bureau of Water and Air Resources handles all legal actions, proceedings and appeals involving the abatement of air and water pollution and the disposal of solid wastes. The Bureau also defends the Department of Environmental Conservation on review proceedings involving water resources matters.

DEPARTMENT OF COMMERCE

Industrial and recreational development within the State are important responsibilities of the Department of Commerce. Business firms now located in New York insist upon adequate supplies of fresh water for their operations, and new industries are attracted to the State because it is blessed with sufficient quantities of such water.

OFFICE FOR LOCAL GOVERNMENT

This agency in the Executive Department aids local governments to develop more effective services by securing aid and assistance from other State agencies and the Federal government. It acts as a clearing house for information and makes studies that help to solve problems common to many local governments. Important among these are the improvement of water supply facilities and the fight against polluted waters.

OFFICE OF PLANNING SERVICES

This office maintains and, through applications to State functional plans and the review of development proposals, assures that the State Development Plan is updated and improved. The office is

the State clearinghouse for A-95 reviews; it administers Federal grant programs in 701, health, crime control, Appalachia, and EDA; it supports State and local planning with basic data and technical assistance. Two river valley commissions-Hudson Valley and St. Lawrence-Eastern Ontario-are within the office, which provides staff support for them.

ATOMIC AND SPACE DEVELOPMENT AUTHORITY

The Authority's activities are principally devoted to execution of its responsibilities under the New York State Power Program related to the qualification and acquisition of the most suitable sites for nuclear power facilities, the provision of new environmental protection facilities for nuclear power facilities in the State, the provision of nuclear fuel to the Power Authority of the State of New York and the fostering of research in more efficient and environmentally protective methods of energy generation.

Other power-related Authority research efforts include those related to unique nuclear siting concepts such as island sites, the analysis of the suitability and realibility of alternative cooling systems for power generation facilities, and studies of systems for the utilization of heat from the nuclear power plant in improving the processing of waste water and in producing potable water.

The Authority also encourages efforts leading towards increased atomic and space related industrial activity within the State.

DEPARTMENT OF PUBLIC SERVICE

The regulation of public utilities in New York State, including privately-owned water companies with a property value of $30,000 or more, is the responsibility of the Public Service Commission.

These water utilities serve about 10 percent of the people of New York State. The Commission's statutory powers extend over all matters concerning rates and charges, finances and adequacy of service. Staff investigations, analyses and reports on these matters to the Commission. In formal proceedings before the Commission, staff members testify on property valuation, rates and charges, service and finances.

POWER AUTHORITY OF THE STATE OF NEW YORK

The Power Authority was created in 1931 to improve the International Rapids section of the St. Lawrence River near Massena, in cooperation with Federal and Canadian authorities. The aim was to create hydroelectric power and to clear the rapids for navigation

at the same time. As a result of a later treaty with Canada, the Power Authority's scope was widened to develop additional power resources on the Niagara River, while also preserving and enhancing the beauty of the Niagara Falls.

The Public Authorities Law was recently amended to authorize the Authority to construct nuclear facilities and hydroelectric pumped storage projects.

HUDSON RIVER-BLACK RIVER REGULATING DISTRICT

This agency is charged with the responsibilities of regulating streamflow in the 6,500 square mile Black River and Upper Hudson River Basins. The district maintains and operates the Stillwater, Old Forge, Sixth Lake, and Great Sacandaga Lake reservoirs to regulate streamflow for the health, safety and welfare of the public. The reservoirs also provide recreational facilities and water for the generation of power.

The cost of constructing and maintaining these river regulating projects is apportioned among the public corporations, municipalities, and parcels of real estate that are benefited.

PORT MANAGEMENT AGENCIES

Port of New York Authority. Created in 1921 by the States of New York and New Jersey with the concurrence of the President and the Congress, the Port of New York Authority has the duty of making recommendations to Congress and to the states concerned for the better conduct of commerce passing through the Port of New York. It also appears before regulatory bodies in protection of the Port's interests. The authority is a public corporation, enpowered to purchase, construct, lease and operate any terminal or transportation facility within the port district.

Albany Port District Commission. The Albany Port District embraces the City of Albany, the City of Rensselaer, and adjacent lands and water in the Hudson River.

Niagara Frontier Port Authority. The Niagara Frontier Port Authority is a public benefit corporation created to operate a port district which embraces the Cities of Buffalo, Lackawanna and Tonawanda and the Towns of Hamburg, Amherst, Cheektowaga, and West Seneca.

Ogdensburg Bridge and Port Authority. This authority was created to construct and operate an international toll bridge between Ogdensburg, New York, and Prescott, Ontario, which was officially opened in September, 1960. In 1963, the authority was given the further responsibility of developing the Port of Ogdensburg on the St. Lawrence River.

Port of Oswego Authority. The function of this agency is to survey, develop, operate and promote port facilities in the Oswego Port District which embraces the City of Oswego and the Town of Scriba.

II - DIVISIONS WITHIN THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Located within the Department of Environmental Conservation are several divisions formerly within the Conservation Department, which are involved in various facets of water resources activities. These divisions include the following, which are under the Environmental Management Office, except as noted.

DIVISION OF WATER RESOURCES

The Division of Water Resources previously served as the secretariat for the Water Resources Commission and provided direct staff services to the Commission. The Division also carried out investigations, conducted public hearings and carried out certain regulatory functions involving public water supplies on behalf of the Commission.

Under the new Department of Environmental Conservation, the Division's primary responsibility is centered in the field of water resources planning and management. The appraisal of specific project proposals, plans and technical reports that affect water resources remains a basic responsibility of the Division, and staff obtains recommendations and comments from various affected State agencies for consolidation into a single position for the Commissioner of the Department in dealing with Federal and interstate planning agencies. The Division also continues to carry on the regulatory functions previously assigned to the Commission.

To permit a decentralization approach to planning activities, three regional offices have been established to serve the eastern, central and western portions of the State, respectively. Each region is further subdivided into district offices which are located at appropriate locations throughout the State. The regional and district offices provide staff services and perform and coordinate planning activities for the regional water resources planning boards. In addition, the State responsibilities related to various interstate and State-Federal river basin surveys are met through the regional and district offices.

DIVISION OF LANDS AND FORESTS

Administration of over 3.3 million acres of State-owned land area, including the lakes, ponds, streams, rivers and coastline lying therein, is one of the primary functions of this Division. Included are more than 2.6 million acres of State Forest Preserve land and 700,000 acres of State forest and multiple-use land.

The Division also assists in maintaining and improving the hydrologic condition of over 21 million acres of private and public forest and woodland. Through District Field Offices, the Division

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is responsible for providing forest fire protection and also institutes control measures against forest insects and diseases. Professional forest management assistance is also available to private forest landowners through the District Offices including the sale of 15-20 million tree seedlings annually for reforestation purposes. All of these activities are of importance in protecting the watershed values of the State's forest cover.

The Division cooperates with the U. S. Forest Service in the Public Law 566 Small Watershed Program and other Federal-State river basin studies; it also serves as a regional State Park Commission for the 16 Forest Preserve Counties in the Adirondack and Catskill Mountain regions.

DIVISION OF FISH AND WILDLIFE

This Division has mandated responsibility for the efficient management of the fish and wildlife resources of the State - including its wildlife, fish, shellfish, crustacea, protected insects and game as defined by law. Such management is deemed to include both the maintenance and improvement of such resources as natural resources and the development and administration of measures for making them accessible to the people of the State.

Action programs developed to accomplish these mandates fall in the general areas of environmental protection, environmental management, species management, public use and extension services and planning. Pending completion of the new organizational structure of the Department; these programs are carried out by this Division through four Bureaus: Fish, Wildlife, and Ecological Standards.

The division participates in Federal-State comprehensive water resource planning; cooperates with other Federal and State resource agencies and receives reimbursement for various research and management projects through Federally aided Fish and Wildlife Restoration programs.

DIVISION OF MARINE AND COASTAL RESOURCES

This new Division was created by an act of the 1969 Legislature from the former Bureau of Marine Fisheries in the Division of Fish and Wildlife.

The responsibilities of the Division are to preserve our estuaries, marine and coastal waters as valuable natural resources, while at the same time giving consideration to utilizing their full potential for recreation, commercial and urban development.

DIVISION OF MINERAL RESOURCES

This Division is responsible for the regulation of oil and gas

activities on public and private lands throughout the State. Its basic functions are the prevention of waste, provision for the operation and development of oil and gas properties in such a way that a greater ultimate recovery of these natural resources will result in protection of the correlative rights of all relevant parties. It is similarly entrusted with the regulation of underground storage of natural gas.

FLOOD CONTROL UNIT

This unit is part of Central Engineering but operates under the Deputy Commissioner for Environmental Management in matters concerning responsibiity for the administration of flood control, beach erosion and hurricane protection activities in New York State. The State participates with the Federal government in a long-range program of flood control by assuming responsibility for all non-Federal project requirements such as lands and rights-of-way, relocation or reconstruction of utilities and other facilities, and maintenance where required by Congressional authority..

The beach erosion and hurricane protection activities are accomplished by participation in the Federal programs as representative of all non-Federal interests and by cooperating with local governments in non-Federal projects.

Other responsibilities include the operation and maintenance of 70 flood protection works and one flood control dam, in addition to regulation of water levels of Lake George.

CENTRAL PROGRAM PLANNING

This unit which is under General Administration is the coordinator and liaison between all sub-functional areas of natural resources planning in the Department of Environmental Conservation. This unit will ensure that water resources planning efforts and other Department planning functions to meet total environment planning needs are compatible.

OFFICE OF RECOVERY, RECYCLING AND REUSE

This office under Ecological Research and Planning was created as a new function in the Department of Environmental Conservation. Its responsibility is to conduct research and to encourage the recovery, recycling and reuse of solid wastes.

Among those functions which were transferred to the Department of Environmental Conservation from other previously existing departments, are the following, now under the Environmental Quality Office:

Pure Waters. The activities of this office include the water

pollution control and sewage treatment plan construction grant functions formerly within the authority of the Health Department.

Solid Wastes. The responsibilities of this office include solid waste engineering and administration of solid waste planning grants functions formerly under the Health Department.

III - INTERSTATE COMPACTS

DELAWARE RIVER BASIN COMMISSION

Created in 1961 (Conservation Law, Article VII, Title I, Section 801-812) by a compact among the States of New York, Pennsylvania, New Jersey and Delaware and the Federal government, this agency is responsible for the planning, conservation, use development, management and control of the water and related natural resources of the Delaware River Basin.

The 12,750 square mile Delaware Basin supplies water to more than 13 million inhabitants of the New York City and Philadelphia metropolitan areas.

This Commission is an agency in which the participating states are full operating partners with the Federal government. Its five members are the Governors of the four signatory states and the Secretary of the Interior.

Encompassed in the Commission's plan for the basin are flood control, water supply, hydroelectric power, recreation, water quality management, fish and wildlife preservation, soil conservation and other functions.

The Commission's administrative, planning and construction costs are financed by the signatory parties.

OHIO VALLEY WATER SANITATION COMMISSION

Control of water pollution in the Ohio River Drainage Basin is the concern of this interstate agency, created under Public Health Law, Article 11-13. It is made up of representatives from Ohio, West Virginia, Pennsylvania, Illinois, Indiana, Kentucky, Virginia, and New York, as well as from the Federal government.

The Commission prescribes treatment requirements for the waters of the basin and has legal powers to enforce standards and requirements.

There are three commissioners from New York State. One is the Commissioner of Health, and the other two are appointed by the Governor. Annual appropriations are made to cover New York State's share of the Commission's operating cost.

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

Control of pollution in the interstate waters of the New England area is the work of this agency, which consists of

representatives of all of the New England states and New York, created under Public Health Law, Article 11A. The Commission is responsible for establishment of standards of water quality for various classifications of use. The signatory states appropriate funds recommended by the Commission for operating expenses.

NEW YORK-VERMONT INTERSTATE COMMISSION ON THE LAKE CHAMPLAIN BASIN

This agency is responsible for fostering development of the resources of the Lake Champlain Basin. In carrying out this responsibility, the Commission promotes cooperation between New York, Vermont, and the Canadian Province of Quebec. New York is represented by eight members, including the Commissioners of Health, Commerce and Agriculture and Markets. The signatory states bear the operating costs.

GREAT LAKES COMMISSION

The States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin make up the membership of this Commission. The Compact, under Conservation Law, Article VII, Title II, Sections 815-822, which formed the Commission, permits inclusion of the Canadian Provinces of Quebec and Ontario, although these regions have not as yet joined.

The goal of the Commission is to promote the orderly, integrated and comprehensive development, use and conservation of the water resources of the Great Lakes Basin. In its work it considers all aspects of the resources of the basin, including industrial, commercial, agricultural, residential and recreational use. However, the Commission's powers are limited to study and recommendation.

The New York State delegation consists of five commissioners. The operating expenses are financed by the signatory states.

INTERSTATE SANITATION COMMISSION

This agency is responsbile for anti-pollution measures affecting coastal, estuarial and tidal waters in a district that extends from Sandy Hook in New Jersey, includes all of New York Harbor, north on the Hudson River to the northerly boundaries of Westchester and Rockland Counties, then easterly to Long Island Sound, then to New Haven on the Connecticut shore and Port Jefferson on the north shore of Long Island. Along the south shore of Long Island, it extends easterly to Fire Island Inlet. It has investigative power and may resort to the courts to compel enforcement of Commission orders. The Commission seeks to develop better coordination and more active cooperation among the interested entities toward the construction of necessary waste treatment works to improve and protect water quality in the district.

In addition, it has been given responsibilities relating to air pollution problems affecting New York and New Jersey.

The signatory States of New York, New Jersey and Connecticut appropriate funds recommended by the Commission for its work.

SUSQUEHANNA RIVER BASIN COMPACT COMMISSION

This Commission was created by the Susquehanna River Basin Compact which became effective with the signature of the President on December 24, 1970. The Commission is created as a body politic and corporate, with succession for the duration of the compact, as an agency and instrumentality of the governments of the signature parties which are the States of New York, Pennsylvania, and Maryland and the Federal government. The Commission is created for the proper management and effective utilization of the water and associated land resources of the Susquehanna River Basin. The Commission is expected to function in a manner similar to the Delaware River Basin Commission.

IV - CURRENT PLANNING PROGRAMS

TYPES OF STUDIES

Under the Water Resources Planning Act of 1959, New York State set up the administrative machinery capable of meeting the demands of tomorrow. The Department of Environmental Conservation, established July 1, 1970, has the means to achieve effective coordination at all levels of government and has the capability to provide the support needed for planning to meet future water resources goals and objectives. Some planning programs are carried out primarily by State agencies; some are joint efforts of the State and local governments; some are State-Federal or interstate partnership programs. All of the programs are interrelated and coordinated with all interests, public and private.

Planning programs may be considered to be divided into two types: Type I (Reconnaissance Level Studies) and Type II (Comprehensive Regional Level Studies).

New York State completed reconnaissance or Type I Studies in 1966. However, it is still engaged in Federal studies of this nature. Comprehensive Regional Studies (Type II) are presently being undertaken in eleven regions of the State under Regional Water Resources Planning Boards. In addition, Federal-State Type II Studies have been undertaken in conjunction with Coordinating Committees. Future studies of this nature are expected in cooperation with Basin Commission (Federal-State) Type II investigations.

Type I Studies (Reconnaissance Level). A Type I Study is a preliminary, or reconnaissance, investigation, intended to provide broad scale analyses of water and related land use needs and opportunities to furnish general appraisals of the probable nature, extent and timing of measures of their solution. The framework plan is based on planning steps, using available data and information, general relations, reasoned approximations and the judgment of experienced planners. It usually includes the following steps:

1. An inventory of the water resources of the region, including quantity and quality of surface and groundwaters and the initiation of an economic base study.

2. The determination of needs to satisfy all of the diverse water resources requirements, not only for the immediate future but also for as much as fifty years ahead. The economic base study provides the projections and estimates of future population, employment, income, etc., that must be translated into water uses and demands for intervening decades during the fifty-year period.

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3. An analysis of the capabilities for meeting present and future needs and opportunities.

4. While potential reservoir sites may be identified, project formulation studies are not undertaken. The study will reach conclusions as to the urgency of water and related land problems in the major watersheds or sub-watersheds located in the region, consider alternative programs and recommend priorities for the more detailed studies leading to action programs. Emphasis is placed on early action (to 1980) programs, but the overall program is developed to the year 2020.

A broad range of variability in the intensity of Type I studies is possible. By means of supplementary studies, it is possible to upgrade a framework study to a more comprehensive one, especially with regard to identifying the economically feasible projects justified within the next decade or two.

Type II Studies (Comprehensive Regional Level). A Type II Study is intended to provide a comprehensive, multipurpose plan for the optimum development of the water resources of a region. The scope of the investigation will include the first three steps outlined above for Type I Studies, although usually undertaken in more detail than in a framework study. Other steps are:

1. A study of various alternatives to satisfy the diverse needs, many of which may compete with one another. This involves considerations and analyses of both structural and non-structural measures and the development of the several alternative plans that appear to be economically feasible and show promise of being acceptable to the local people.

2. After comparative analysis of the various alternatives, the plan for comprehensive, multipurpose development to the year 2020 will be evolved. This plan stresses early action (1980) requirements and contains alternatives that meet a balanced mix of water resources objectives. These are environmental quality, regional development and national economic development objectives.

3. The plan will include recommendations for the necessary management to implement the plan effectively, including financing, construction, and operation and maintenance of the necessary projects.

Local participation is essential if a truly comprehensive plan to meet the needs of the people is to evolve from this type of study. Also, during implementation, support of local entities is necessary to assure prompt and orderly development of the water resources to meet the water resources needs.

REGIONAL BOARD STUDIES

At the present time, most comprehensive, or Type II, planning in New York State is conducted under the auspices of Regional Water Resources Planning Boards established under the provisions of Article V, Part V, of the Conservation Law.

Regional Water Resources Planning Boards are established after public hearings and approval by the Department of Environmental Conservation. This type of board is most appropriate for the study of an intrastate river basin embracing all, or parts, of one or more counties. However, it can also be used effectively for interstate river basin studies.

A Regional Board has seven members selected by the Department of Environmental Conservation from a list of fourteen names submitted by the counties involved. Each member represents one of five specified interests or is a member-at-large. The specified interests are agriculture, industry, public water supply, municipal corporations and outdoor recreation, including fish and wildlife interests. The Board is responsible for the conduct of the study and for evolving a comprehensive plan of development of the region's water resources.

Upon approval of a study, the Department, through the Division of Water Resources, provides office space, equipment, clerical, engineering, legal and other personnel and services to the board. Of the study's total cost, 75 percent is borne by the State and the other 25 percent by the participating counties.

Under the auspices of the Regional Board, the staff of the Division of Water Resources performs a comprehensive, Type II, study of the water resources development of the region.

A typical regional board river basin study may consist of as many as 23 technical tasks, as follows:

1. Review of Previous and Current Studies and Reports
2. Economic Base Study
3. Hydrology and Hydraulics, Including Sediment Transport and Deposition
4. Urban, Rural, Domestic and Industrial Water Supply and Demand
5. Water Quality Management
6. Flood Plain Development
7. Navigation
8. Agricultural Water Supply and Demand
9. Drainage
10. Erosion and Land Treatment
11. Recreation

12. Fish and Wildlife Enhancement and Protection
13. Aquatic Vegetation
14. Hydroelectric Power
15. Lake Level Regulation
16. Shoreline Development
17. Water and Waste Water Treatment Measures
18. Preliminary Design and Cost Estimates of Multiple and Single Purpose Hydraulic Structures
19. Formulation of the Comprehensive Plan
20. Financial Feasibility of First Stage Features
21. Legal and Legislative Considerations
22. Recommendations for Additional Study
23. Program for Implementing Comprehensive Plan

Intermunicipal Public Water Supply Studies under Article V, Part V-A, of the Conservation Law can be made concurrently with multipurpose water resources planning studies. The State Department of Health administers this single purpose program. Effective coordination by the regional board serves to minimize possible duplication of effort. Under Part V-A, an engineering and economic feasibility study results in a plan for the development of projects to provide adequately for present and reasonably foreseeable area-wide public water supply needs. After approval by the Department of Environmental Conservation as to its area and scope, the State provides 100 percent aid for this type of study, which is an important part of broad water resources planning.

Federal agencies such as the Corps of Engineers and the U. S. Department of Agriculture provide input to the studies. These agencies recieve Federal funding based on specific legislation which enables them to participate.

Finally, a comprehensive plan is developed, identifying projects economically justified for development in the foreseeable future, and outlining possible means of financing their construction.

A summary of the eleven regional board and river basin studies that are now in progress under Article V, Part V, of the Conservation Law, is as follows.

Erie-Niagara Basin. This basin covers a 2,000-square-mile area consisting of Erie County and portions of Cattaraugus, Genesee and Wyoming Counties. The Regional Board Study was initiated in January, 1963, and a comprehensive plan is complete. This includes summary and technical reports consisting of recommended elements of the early action and long-range Board programs. Public hearings on the Board's Plan will be held in 1971.

PLANS BEING FORMULATED

Cayuga Lake Basin. The Counties of Cayuga, Seneca, and Tompkins joined together on a Regional Board established in 1964. A Regional Board Plan is scheduled for completion in 1972.

Wa-Ont-Ya Basin Board. Wayne, Ontario, and Yates Counties are cooperating on a Regional Board that was established in mid-1965. A Regional Board Plan is scheduled for completion in 1972.

Eastern Oswego River Basin. A Regional Board was established in 1967 to include the Counties of Cayuga, Oneida, Onondaga, Oswego, and Madison. A Regional Board Plan is scheduled for completion in 1972.

The Regional Board Studies for the Cayuga Lake, Wa-Ont-Ya and Eastern Oswego River Basins are being accomplished in the Oswego River Basin Comprehensive Study which encompasses the areal extent of the three Boards.

PLAN FORMULATION BEING INITIATED

Eastern Susquehanna River Basin. The Regional Board for this basin consists of the Counties of Broome, Chenango, Cortland, Delaware, Madison, Otsego and Tioga. Alternative comprehensive water resources development systems for the Basin are being studied. A Regional Board Plan is scheduled for completion in 1972.

Chemung River Basin. A Regional Board for this basin consisting of the Counties of Chemung, Steuben, and Schuyler was established in 1968. Alternative comprehensive water resources development systems for this Basin are being studied. A Regional Board Plan is scheduled for completion in 1972.

Allegheny River Basin. This Regional Board consists of the Counties of Chautauqua, Cattaraugus, and Allegheny. Investigation of water resources needs and capabilities and preliminary plan formulation are being undertaken. A Regional Board Plan is scheduled for completion in 1972.

St. Lawrence River Basin. A Regional Board has been formed, consisting of the Counties of Franklin and St. Lawrence. Their study was initiated in March 1969 and a Regional Board Plan is scheduled for completion in 1972.

Black River Basin. The Regional Board for this basin consists of the Counties of Lewis, Herkimer, Oneida, and Jefferson. Their study was initiated in March, 1969 and a Regional Board Plan is scheduled for completion in 1973.

STUDIES UNDERWAY

Genesee River Basin. The formation of a regional board was approved in 1969 for the Counties of Allegany, Livingston, Wyoming Genesee, Ontario and Monroe. A plan formulation study is scheduled to begin in 1970. A Regional Board Plan is scheduled for completion in 1973.

Delaware River Basin. A Regional Board was established in 1968 for the Counties of Sullivan and Delaware. Their study is scheduled to begin in mid-1970 and a Regional Board Plan is scheduled for completion in 1974.

NEW BOARDS

Applications presently are also pending for the establishment of Regional Boards in the following areas:

Lake Champlain-Lake George Basin	Long Island
Mohawk River Basin	Upper Hudson River Basin

JOINT PLANNING STUDIES

A number of studies are being conducted jointly by Interstate or joint Federal-State commission or coordinating committees. An important State objective in these studies is to insure that joint Federal and State participation is achieved and recommended measures will meet the needs of the State.

Joint studies now in progress include the following.

Genesee River Basin. This is a Coordinating Committee Study (Type II) which involves the States of New York and Pennsylvania, and several Federal agencies. This study was initiated early in 1963 and the staff of the Division of Water Resources contributed to certain phases of the study including the preparation of a State supplement. The final Coordinating Committee report was published in mid-1970. Upon GLBC approval of the Coordinating Committee Report, the Coordinating Committee report and the GLBC Review Report will be forwarded to the Water Resources Council.

Susquehanna River Basin. This Type II study is being conducted under a Coordinating Committee involving the States of New York, Pennsylvania, and Maryland, and Federal agencies. An interstate compact to provide for management and implementation of the developing comprehensive plan is being drafted. The study was initiated in June, 1963 and, here again, the Division of Water Resources was an active participant. It undertook special consultant studies and prepared a State supplement. A draft of the final Coordinating

Committee Report was completed in 1970 and printing will be completed in early 1971.

Delaware River Basin. The planning, development, and management of the water and associated land resources of this basin are under the Delaware River Basin Commission. The Division of Water Resources provides technical data and evaluations to the Delaware River Basin Commission staff and acts as liaison for the New York agency participation.

Ohio River Basin. This is a framework study by a Coordinating Committee including 11 states and the Federal agencies. The area in New York includes parts of Chautauqua, Cattaraugus and Allegany Counties in the Allegheny Basin. This study was initiated in September 1963 and New York State began to participate actively in the study in mid-1964. A final report was completed in 1969.

Great Lakes Basin. Several studies are underway in this basin. The Corps of Engineers is making a study of levels for the International Joint Commission and the Environmental Protection Agency is conducting a large-scale water pollution control study for each of the Great Lakes and tributary basins.

Appalachia Program. The water resources survey of the Appalachia Regional Commission being conducted by the Corps of Engineers, the land stabilization, conservation and erosion control studies conducted by the U. S. Department of Agriculture (Soil Conservation Service), and other aspects of the program, cover thirteen Southern Tier Counties of New York. The following interstate river basins are involved: Delaware, Susquehanna, Genesee and Allegheny. The Department of Environmental Conservation works with other State and Federal agencies to provide input to the study and the extensive coordination needed to insure integration of the State's many water resources interests. The Division of Water Resources prepared a State supplement to the report which was completed in 1970.

North Atlantic Regional Water Resources Study. This $4 million study embracing 13 states, the District of Columbia, and five Federal agencies with the North Atlantic Division, Corps of Engineers, serving as chairman of the Coordinating Committee was initiated in January 1966. This study is now in the plan formulation stage and is scheduled for completion in 1971.

Hudson River Valley Commission. The purposes of the Commission are to encourage the preservation, enhancement, and development of the scenic, historic, recreational and natural resources of the Hudson River Valley. Nine members of the Commission from New York are appointed by the Governor. This agency was never set up as an interstate body. The Commission was established within the Office of Planning Services by Chapter 74 of the Laws of 1971; the

previous membership of the Commission continued.

NEW ENGLAND RIVER BASINS COMMISSION (NERBC)

This Commission was created on September 6, 1967 by the President of the United States under authority of Title II of the Water Resources Planning Act of 1965. NERBC is composed of a chairman appointed by the President, a member designated by each Governor, a member designated by the head of each of nine Federal departments or agencies with substantial programs or interests in water and related land resources, and a member designated by each of six Interstate Compact Commissions. States with membership are Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island and Vermont.

The primary purpose of the Commission is to serve as the principal agency for coordination of water and related land use planning in the region, including Federal, State, interstate, local and non-governmental planning. The Commission will also prepare and keep up to date a comprehensive, coordinated joint plan for use and development of water and related land resources. The Commission is going to use the results of the NAR Study as its framework plan. More detailed studies are to be undertaken.

GREAT LAKES BASIN COMMISSION

The Great Lakes Basin Commission was created by Presidential order in 1967 under authorization of Title II of the Water Resources Planning Act of 1965. This commission is composed of a presidentially appointed full-time chairman, and one representative from each of nine Federal agencies concerned with water resources, each of the eight Great Lakes states, and the Great Lakes Commission. The objectives of the Basin Commission are to prepare a joint coordinated plan for the development of the basin's water and related land resources, taking into consideration the diverse needs of the basin and preserving opportunities for the future; recommend long-range priorities for implementation of the plan; and coordinate water and related land resources planning efforts at all levels of government in the basin. A framework plan is scheduled for completion in 1972. More detailed studies will then be undertaken.

NORTHEASTERN UNITED STATES WATER SUPPLY STUDY (NEWS)

Authorization for this study was enacted on October 27, 1965 under Title I of Public Law 89-298. This study is a comprehensive one whose study area includes all river basins in the United States that drain into Chesapeake Bay, the Atlantic Ocean north of Chesapeake Bay, into Lake Ontario and into the St. Lawrence River. The comprehensive study is being conducted under the direction of the Corps of Engineers, with participation of all Federal, state,

and local government agencies, and private and public organizations involved in the field of water supply. This study is scheduled for completion in 1974.

STATE FRAMEWORK STUDIES

Several programs have been established for conducting framework studies in various depths for various regions and for the State as a whole.

These programs include the following.

STUDIES FOR OFFICE OF PLANNING COORDINATION

In carrying out its central planning responsibilities, the Office of Planning Coordination (OPC) is preparing long-range development plans for their eleven Planning and Development Regions which are oriented toward market areas. These studies are partially sponsored and funded by the Federal Department of Housing and Urban Development (HUD). The water resource aspects of these planning studies are being performed by the Division.

ACCELERATED WATER RESOURCES PROGRAM

The State, in 1965, initiated a six-year comprehensive program for the elimination of water pollution of its lakes, streams and rivers. This $1.7 billion Pure Waters Program will accelerate water quality improvement. This massive stream cleanup, coupled with the severe effects of the extended drought in the northeast United States, has added a new degree of urgency to water resources planning. To meet these needs, Governor Rockefeller, on August 25, 1965, directed the former Water Resources Commission to initiate an Accelerated Water Resources Program to gain the basic information necessary for planning and development in the minimum amount of time.

To begin this accelerated program, four eminent consulting engineering firms were retained to develop initial recommendations for alternative measures to meet short and long term needs on a Statewide basis. These reconnaissance studies considered multi-purpose water needs, availability of water and potential reservoir sites. The results of these studies present generalized alternative development plans with preliminary estimates of development cost.

The Accelerated Water Resources Program does not preempt the importance of the regional planning board structure, but rather serves as a basis for immediate planning and development programs. It also provides a basic framework for future detailed river basin planning on a regional basis.

APPALACHIA REPORT FOR O.P.C.

The Division prepared a report on the New York Area of Appalachia entitled, "Potential Water Resources Development" for the overall study being undertaken by O.P.C. Information in this report is at the Type II planning level.

V - AN ACT FOR PURE WATERS

An important new step in the field of water resources in New York was taken in 1965 when the people of the State approved legislation providing funds for sewage treatment facilities to combat water pollution. This new law--known as the Pure Waters Bond Act--will insure State leadership in the Federal-State-local partnership efforts to fight water pollution in New York.

The $1 billion bond issue will pay the State's six-year share, and prefinance the Federal share, of sewage treatment plant construction and facilities costs to meet the stream classification standards that were established by the former Water Resources Commission. Reclassification of streams and the upgrading of standards for water quality are now under the jurisdiction of the new Department of Environmental Conservation.

Under this act, funds are also provided for:

State aid to municipalities for operating and maintaining sewage treatment plants.

An automated system to monitor water quality in the State's principal rivers.

Expanded State research in water pollution control methods.

Comprehensive sewerage needs planning.

Industrial incentives in the form of tax exemptions for the added value of pollution control equipment and a tax reduction for expenditures in constructing or improving waste treatment facilities.

The Pure Waters Program also makes possible:

More vigorous enforcement of the State's laws against water pollution.

State and Federal action to eliminate water pollution by government institutions in New York State.

As a result of the six-year massive cleanup, water of adequate quality will be available for the many short- and long-range needs, which are being determined through the regional and river basin studies.

Some highlights of the Pure Waters Program for the period of September, 1965 through June, 1970, are as follows:

1. Water Pollution Abatement Proceedings. 494 cases were noticed for hearing and 433 Commissioner's orders were issued.

2. Operation and Maintenance Grants. 1,176 applications were approved and a total of $34,404,976 was disbursed.

3. State Construction Grants. 58 projects have been completed, with State payments in excess of $5,831,000; 298 projects are also presently active with State grants amounting to approximately $1,256,928,000.

4. Comprehensive Intermunicipal Water Supply Studies. 37 studies have been completed, generally for an entire county and 16 studies are in progress. The dollar amount for all of these studies is in excess of $4 million.

5. Comprehensive Sewerage Studies. 125 studies have been completed and 21 studies are now in progress. The dollar amount of these studies is in excess of $9 million.

VI - STREAM PROTECTION LAW

Effective January 1, 1966, a new law transferred to the former Water Resources Commission certain powers and duties in water management, which in turn were formerly the responsibility of the Conservation Department and the Department of Public Works. Under this act, the Department of Environmental Conservation now has jurisdiction in the following areas.

DISTURBANCE OF STREAM BEDS

The beds of certain streams may not be disturbed unless permission is granted by the Department, except under emergency conditions.

DREDGING AND FILL IN NAVIGABLE WATERS

Dredging or the placing of fill in the navigable waters of the State can only be undertaken after a permit has been issued by the Department (an exception is for the tidewaters bordering the Counties of Nassau and Suffolk, which are exempt). Navigable waters are defined as publicly owned lakes, rivers and streams upon which vessels are operated.

CONSTRUCTION OF DAMS AND DOCKS

A permit must be secured from the Department before undertaking the repair, construction or reconstruction of certain dams or docks.

VII - RESEARCH IN WATER RESOURCES

In the past, research has provided invaluable basic data and methods for using this data to guide the better development and protection of our water resources. The need for research continues today with even greater intensity because of the continuing concern in the area of environmental quality.

In the Department of Environmental Conservation, a number of varied projects are being carried out to learn more about the water resources themselves and the impact man can have on them. Basic data collection is carried out in a cooperative program with the U.S. Geological Survey in obtaining and analyzing information on surface and ground water - both quality and quantity. Time of travel studies for waste assimilation determinations are carried out and a program to benchmark the quality of water in the State's lakes has been initiated. An early effort in this area has been a study of the chemical, physical and biological factors affecting the water quality and the rate of eutrophication of Oneida Lake.

The Environmental Quality offices in the Department are conducting a variety of research projects including a eutrophication study of Canadarago Lake, which is similar to the Oneida Lake study previously mentioned. In the waste treatment and pollution control areas, the feasibility of chemical physical waste treatment schemes as well as improved biological treatment are being investigated. The performance of various kinds of filters is being undertaken as well as basic research in biological denitrification of wastes.

In the Division of Water Resources, research is being undertaken to develop systems analysis techniques for use in the water resources planning studies. The determination of consequential damages to farmers as the result of land takings for public projects is being undertaken by Cornell College of Agriculture in cooperation with the Division.

A sociological study of the acceptance of water resources plans is also being undertaken by Cornell.

The monitoring of various pesticide levels and metallic pollutants in fish is performed by the Division of Fish and Wildlife in the Department.

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APPENDICES

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APPENDIX I

HISTORY OF

WATER RESOURCES DEVELOPMENT

IN NEW YORK STATE

The start of construction of the Erie Canal in 1817 was the first chapter in the story of water resources development in New York State.

Although Governor DeWitt Clinton was ridiculed by many for his "big ditch", completed in 1825, the canal played a major role in the growth of the Western United States. In fact, a U. S. Senate committee reported that it did more to advance the wealth, population and enterprise of the western states than all other causes combined. The canal eventually was widened, deepened and re-routed until it became the State Barge Canal System.

In the latter part of the 19th Century, New York State experienced wide-spread flooding. This led, in 1902, to establishment of the Water Storage Commission, the State's first agency for regulation of streams by water storage.

It was concerned primarily with flood control, and recommended that a permanent State agency regulate streams, with costs borne by the beneficiaries. This recommendation led to the creation, in 1904, of a River Improvement Commission. In its two years of operation, this agency made some investigations but produced few tangible results.

In 1905, the Water Storage Commission was superseded by the Water Supply Commission, largely as the result of fears of small communities. The new commission had jurisdiction over allocation of municipal water supplies. A year after its establishment, this authority was extended to include the taking of water by private water companies. The Water Supply Commission also carried out extensive investigations into water power matters and it devised plans to develop water power for public use under State ownership and control. Three years later, in 1909, the agency's jurisdiction was extended again, this time to include the improvement of water courses at local expense.

In 1911, the Conservation Commission succeeded the Water Supply Commission and assumed responsibilities in the following areas:

Water storage and conservation for power purposes.

Hydraulic development.

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River improvement.

Drainage.

Water Supply and sewerage.

Inspection and supervision of hydraulic structures.

Legislation in 1915 provided for the creation of river regulating districts under an unnamed commission. Four years later, the Black River Regulating District became the first district formed under this law. Nearly three decades later, in 1948, the State approved this district's plans to construct a dam on the Moose River at Panther Mountain to regulate the river's flow. This dam would have flooded forest preserve lands, which were permitted by the State Constitution at the time. An 1894 constitutional amendment had established the Forest Preserve and the principle that the Preserve be "forever wild". A 1913 amendment to this article authorized the Legislature to permit construction of reservoirs in the Forest Preserve for water supply purposes, for the canals of the State and to regulate the flow of streams. Despite this, there was strong opposition to the proposed Moose River Reservoir, and by 1953 another constitutional amendment had eliminated the Legislature's power to authorize construction of river regulating reservoirs in the Forest Preserve. This amendment is still in effect.

The State Legislature passed a further restrictive measure in 1969 prohibiting the construction of reservoirs for any purpose by the State or by a River Regulating Board along certain sections of the Upper Hudson River in the Adirondack Park.

TWO WATER POWER COMMISSIONS

The Commission, created in 1915 without a name, finally received in 1922 the title of the Water Power Commission. In the same year, however, State power legislation, probably precipitated by the Federal Power Act of 1920, established the New York Power Commission. Thus, the State had two Water Power Commissions. The first was concerned with river regulation. The other continued the surveys and studies of water power and storage possibilities. It also reviewed plans submitted by applicants for license to develop water power in streams where the State owned power rights.

In 1922, the water power agency, which originally had been borne without a name, was retitled the Water Control Commission and was charged with administration of sections of the Conservation Law relating to river improvement, river regulation, drainage of agricultural lands and water supply.

Finally, in 1926, the Water Control Commission and the New York

Power Commission were combined as the result of the formation that year of the State's Conservation Department. The newly merged organization was known as the Water Power and Control Commission. It consisted of the Conservation Commissioner as Chairman, the Superintendent of Public Works and the Attorney General. To provide staff services for the new Commission, a Division of Water Power and Control was established within the Conservation Department.

THE POWER AUTHORITY IS ESTABLISHED

In 1931, the Power Authority of the State of New York was formed to develop hydroelectric power from boundary waters of the St. Lawrence River. Further legislation in 1951 permitted the Authority to develop the power resources of the Niagara River. This Authority was not the State's first venture into hydroelectric power development. In 1922, the Legislature transferred the control of canal power sites from the Water Power Commission to the Superintendent of Public Works. At the same time, it appropriated $1 million to build power plants at the Crescent and Vischer Ferry Dams, which were being constructed in conjunction with the Barge Canal System. The Superintendent of Public Works was empowered to sell any electric power not needed by the canal or State structure adjacent to the canal.

LEGISLATION TO PROTECT LONG ISLAND

In 1933, it was realized that the water table in portions of Long Island had dropped dangerously because of overpumping by industrial and commercial wells, resulting in salt water intrusion. That year, wells with a capacity of over 100,000 gallons a day (which has since been changed to 45 gallons per minute) were placed under the jurisdiction of the then Water Power and Control Commission. Two years later, another law was passed requiring all well drillers on Long Island to obtain licenses (now a certificate of registration) and to report certain information and well logs for all wells installed.

THE FORMATION OF THE WATER RESOURCES COMMISSION

Serious flooding in 1935 was followed the next year by passage of the Federal Flood Control Act and a New York State law creating a Temporary State Commission for Flood Control. The Superintendent of the Department of Public Works acted for the State in obtaining Federal flood relief under provisions of the Federal Act. This temporary agency remained in existence until 1960 when its functions, powers and duties were transferred to the newly-created Water Resources Commission.

In 1959, membership of the Water Power and Control Commission was enlarged to include the Commissioners of Health and of

Agriculture and Markets. The jurisdiction of the Commission was extended to include multipurpose, comprehensive water resources planning and development by Regional Boards.

In 1960, after lengthy study, the Legislature changed the Conservation Law provisions affecting water resources. The Division of Water Power and Control became the Division of Water Resources, and the Water Power and Control Commission became the Water Resources Commission.

This new commission was also assigned responsibilities originally given to other agencies. For example, it took over administration of county small watershed protection districts, which were made possible by enactment of the Small Watershed Protection and Flood Prevention Act in 1954. This responsibility had been vested in the Department of Agriculture and Markets.

The following year, the Water Resources Commission was enlarged by the addition of the Commissioner of Commerce and four advisory members representing industry, political subdivisions, agriculture, and the sportsmen of the State.

In 1962, the Water Pollution Control Board, which had been charged with the establishment of the stream classifications and policy in the water pollution control area, was abolished. Reclassification of streams and the determination of policy were assigned to the Water Resources Commission with the program implementation including abatement and enforcement assigned to the Commissioner of Health.

In 1965, the membership of the Commission was increased to seven, by the addition of the Commissioner of the Office for Local Government. The Commissioner of Transportation became a member of the Commission as successor to the Superintendent of Public Works in 1967, when the latter post was abolished.

On July 1, 1970, as was previously outlined in the foreword, the Water Resources Commission was abolished, concurrent with the creation of Department of Environmental Conservation.

APPENDIX II

STATE LAW

INTRODUCTION

Under legislation creating the Department of Environmental Conservation (Chapter 140 of the Laws of 1970), the Commissioner of the Department of Environmental Conservation is directed to prepare or cause to be prepared for submission to the Legislature, not later than January 15, 1973, a codification of the laws relating to the functions, powers and duties of the Department as amended, repealed or modified by the Chapter. It is anticipated that the pertinent statutes referring to the former Conservation Department, to the former Water Resources Commission and to the water pollution control activities of the Department of Health will be combined in this codification of changes.

In this appendix, certain references are made to the former Water Resources Commission under the provisions of the former Conservation Law. The Department of Environmental Conservation has now assumed the responsibilities and duties formerly assigned to the Commission and those responsibilities in the field of water pollution abatement, formerly assigned to the Department of Health. Appropriate changes have been made in this Appendix to reflect these changes.

Used throughout this Appendix, unless otherwise specified, the word "Department", refers to the Department of Environmental Conservation; the word "Commissioner" refers to the Commissioner of the Department of Environmental Conservation; and the word "Commission" refers to the former Water Resources Commission.

SYNOPSIS OF PRINCIPLES AND CONCEPTS

The underlying principle of New York's water policies, as indicated in the following references to the State's Constitution, its statutes and case law, is that water is a natural resource, not to be conquered by man, but to be sought, recovered, processed, utilized, reclaimed and reutilized.

STATE CONSTITUTION

The Constitution of the State of New York is the basic written law of the State.

Public Health - A Matter of State Concern. The Constitution provides that:

"The protection and promotion of the health of the inhabitants of the State are matters of public concern and provision therefore shall be made by the State and by such of its subdivisions and in such manner, and by such means as the legislature shall from time to time determine" (Article 17, Section 3).

Financing of Sewage Treatment Works, Water Supply. The Constitution permits counties, cities, towns, and villages in New York State to meet one of the major problems of a heavily populated state in financing sewage treatment facilities, drainage systems and water supplies.

Article 8, Section 2-a of the Constitution provides that the legislature by general or special law may authorize any county city, town or village or any county or town on behalf of an improvement district; to provide facilities, in excess of its own needs, for the conveyance, treatment and disposal of sewage from any other public corporation or improvement district; to provide facilities, in excess of its own needs, for drainage purposes from any other public corporation or improvement district.

Article 8, Section 2-a of the Constitution also provides that the legislature by general or special law may authorize two or more public corporations and improvement districts to provide for a common supply of water, for the common conveyance, treatment and disposal of sewage, for a common drainage system and to contract joint indebtedness for these purposes.

Article 8, Section 2-a further provides that debts contracted pursuant to that article shall be excluded from the constitutional limitation of indebtedness imposed on municipalities.

In order to encourage and stimulate local action by municipalities, New York State voters in 1963 overwhelmingly approved a referendum removing constitutional debt limitations to cover the costs of building sewage treatment plants. The exemption, which began January 1, 1964, covers any sewage facilities contracted for by a municipality during the eleven year period between January 1, 1962 and December 31, 1972 (Article 8, Section 5E and 7).

Forest Preserve. A constitutional amendment of 1894 established the forest preserve and mandated that "The lands of the State...constituting the forest preserve as now fixed by law, shall be forever kept as wild forest lands" (Article 14, Section 1).

An amendment of 1913 to Article 14 provides that:

"The legislature may by general laws provide for the use of not exceeding three per centum of such lands (forest preserve)

for the construction and maintenance of reservoirs for municipal water supply, and for the canals of the State. Such reservoirs shall be constructed, owned and controlled by the State,...and the expense of any such improvements shall be apportioned on the public and private property and municipalities benefited." (Article 14, Section 2) 1/

Drainage. The Constitution provides that general laws may be passed permitting owners or occupants of swamps or agricultural lands to construct and maintain necessary drains, diversions and dikes upon the lands of others for drainage purposes, under proper restrictions and on making just compensation (Article 1, Section 7-d).

Barge Canal System. The Constitution also provides that the legislature may authorize by law the lease or transfer to the Federal government of the Barge Canal System (Article 15, Section 4).

Conservation and Protection of Natural Resources and Scenic Beauty. Article 14, Section 4 of the State Constitution makes it the policy of the State to conserve and protect its natural resources and scenic beauty; improve agricultural lands, preserve air and water, protect shoreline and wetlands, develop and regulate water resources and abate excessive noise.

STATUTES

Water Pollution Control Law.

(1) Background and public policy. Beginning in 1902, this State's water resources control laws began to evolve. The early legislation delegated separate areas of the State's water resources to the Conservation Department, the Health Department and the Public Works Department. As early as 1903, the Legislature enacted its first water pollution control law. 2/

The experience of these Departments in administering their concurrent regulatory functions in the field of water resources demonstrated a need for a broad-based, multipurpose program that would unite the interests of the various State administrative

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1/ See also Conservation Law, Sections 460-466, 618.

2/ "Water Resources Management - Six year Progress Report" Temporary State Commission on Water Resources Planning, Leg. Doc. (1965) No. 27, p. 34..

units into a "concert of cooperation".

This copartnership between the different agencies of the State was achieved with the enactment of the Water Pollution Control Law of 1949 (Public Health Law, Article 12).

Public Health Law, Article 12, declares that it is the public policy of the State of New York (Section 1200):

> "to maintain reasonable standards of purity of the waters of the State consistent with public health and public enjoyment thereof, the propagation and protection of fish and wildlife, including birds, mammals and other terrestrial and aquatic life, and the industrial development of the State, and to that end require the use of all known available and reasonable methods to prevent and control the pollution of the waters of the State of New York".

The purpose of Article 12 is (Section 1201):

> "to safeguard the waters of the State from pollution by: (a) preventing any new pollution, and (b) abating pollution existing when this chapter is enacted, under a program consistent with the declaration of policy above stated in the provisions of this article".

(2) Administrative Procedure. Under this law, the former Water Resources Commission 3/ adopted standards of quality and purity and classified the State's waters in accordance with considerations of "best usage" in the public interest. 4/ The "Rules and Classifications and Standards of Quality and Purity for Waters of New York State" were duly adopted. 5/

3/ The former Water Resources Commission consisted of seven regular members; the Commissioners of the State Departments of Health, Conservation, Transportation, Agriculture and Markets Commerce, Office for Local Government and the Attorney General. There were also four advisory members representing industry, political subdivisions, agriculture and sportsmen of the State (Conservation Law, Section 410). Chapter 663 of the Laws of 1965 increased the number of regular members from six to seven by adding the Commissioner for Local Government.

4/ See Conservation Law, Section 427.

5/ These rules were originally adopted by the Water Pollution Control Board and were subsequently readopted by the former Water Resources Commission [see Public Health Law, Section 1205, subd. (7) (a); 6 (B) NYCRR, Subch. A, Art. 2].

Pursuant to Public Health Law, Section 1205, the Commission's (now Department of Environmental Conservation) procedure is as follows:

(a) A classification survey is made on the basis of drainage-basin areas, including all sub-basins and tributaries to a major drainage outlet.

(b) A report of the survey is published containing tentative classification recommended by the Commission's staff.

(c) The tentative classifications are discussed at public hearings held at convenient locations within the drainage area.

(d) Classifications are adopted by the Department. The Department may modify tentative classifications as a result of the hearing, but once the waters have been classified,

> "it shall be unlawful for any person, directly or indirectly, to throw, drain, run or otherwise discharge into such waters organic or inorganic matter that shall cause or contribute to a condition in contravention of the standards adopted by the water resources commission pursuant to section one thousand two hundred five of this article" (Public Health Law, Section 1220).

(e) Development of comprehensive pollution abatement plans. The plan consists of a description of each pollution problem within the area and the procedure to be followed in each instance to comply with the classification. Reports of progress in achieving compliance are required, and a reasonable time for correction is provided.

(f) The comprehensive plan is then enforced by the Department. Initially, cooperation on a voluntary basis is sought but if the results are unsatisfactory, then the Department, in accordances with its administrative procedures, conducts public hearings prior to the issuance of formal enforcement orders (Public Health Law, Section 1210). If voluntary compliance with the order of abatement is not achieved, the Commissioner is authorized to request the Attorney General to institute appropriate court proceedings to compel compliance (Public Health Law, Section 1251).

The Department is given administrative jurisdiction to abate and prevent the pollution of waters of the State. The Commissioner is granted broad authority, powers and duties to effectuate the provisions of Article 12. Acting through the Commissioner, the Department may adopt, amend or cancel administrative rules and regulations governing hearings, filing of reports and issuance of permits (Public Health Law, Section 1210)..

Persons are required to apply for permits to the Commissioner, or his designated representative, for permission to discharge sewage or industrial wastes through new outlets or to construct or operate and use new disposal systems (Public Health Law, Sections 1230, 1231, 1232). 6/

In enforcing the comprehensive plan,

> "...public hearings shall be conducted by the Commissioner, or his duly designated representative...prior to issuance of an order directing any person to discontinue discharge of sewage, industrial waste or other wastes which contravene the standards established for any waters of the State" (Public Health Law, Section 1240; see also Sections 1241, 1242, 1243).

In 1965, the State Legislature amended the Public Health Law, concerning existing discharges of sewage and industrial wastes, by streamlining the administrative hearing procedures before the Department (Laws of 1965, Chapter 180). Under Public Health Law, Section 1210, as amended, the Commissioner after considering relevant evidence at a hearing is authorized to make, modify or cancel orders requiring the discontinuance of the discharge of sewage, industrial waste or other wastes into any waters of the State in accordance with the provision of Article 12, and specifying the conditions and time within which such discontinuance must be accomplished.

The order of the Commissioner is absolute upon entry and service except that an aggrieved person may seek a court review of any order or determination of the Commissioner.

Violators are liable to the payment of a penalty in a civil action brought by the Attorney General (Public Health Law, Section 1250) and willful violations are punishable by criminal liability in the form of imprisonment or a fine or by both fine and imprisonment (Public Health Law, Section 1252).

(3) Financial Assistance. New York State has pioneered in programs for State aid for comprehensive studies and reports concerning the collection, treatment and disposal of sewage by municipalities (Public Health Law, Section 1263-a); aid for construction of sewage treatment works (Public Health Law, Section

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6/ Public Health Law, Section 1225, provides that the minimum degree of treatment required for the discharge of sanitary sewage into the classified surface waters of the State shall be effective primary treatment.

1263-b, as amended by Laws of 1965, Chapter 177) and State assistance for municipal operations and maintenance of sewage treatment works (Public Health Law, Section 1263-c). 7/

The culmination of New York State's efforts was realized in 1965 when a unaminous State Legislature submitted to the electorate a proposition authorizing creation of a State debt in the amount of a one billion dollar bond issue to combat water pollution by the construction of sewage treatment facilities. The voters of New York State by an overwhelming vote of four to one approved the proposition.

The law is called the Pure Waters Bond Act (Laws of 1965, Chapter 176). Governor Rockefeller outlined a seven-point clean waters program:

1. State leadership in Federal-State-local sharing of the cost of constructing new sewage treatment plants and interceptor sewers. The State assumes thirty percent of the construction costs and prefinances up to thirty percent of the Federal share while the local communities assume forty percent of such costs. (Laws of 1965, Chapters 176 and 177). The one billion dollar bond issue will be used to pay the State's share. To prefinance the Federal share the Capital Budget for 1970 included a First instance Appropriation of 750 million dollars which is ultimately expected to be repaid by the Federal government. New York State communities are entitled to a Federal grant of 50/55 percent. Since the State prefinances up to thirty percent, the municipalities prefinance the difference.

2. Industrial incentives in the form of real property tax exemption for the entire added value of pollution control equipment (Laws of 1965, Chapter 179) and a tax reduction for expenditures in constructing or improving waste treatment facilities (Laws of 1965, Chapter 178).

3. State and Federal action to eliminate water pollution by government institutions in New York State (Laws of 1965, Chapter 853).

7/ Other recent examples of action by the State are Laws of 1965, Chapter 481, which amends the Town Law and empowers town boards to provide for excess sewer facilities; Laws of 1965, Chapter 560 which creates the Hudson River valley scenic and historic corridor; Laws of 1965, Chapter 661, which authorizes projects relating to the use of atmospheric water resources; and Laws of 1971, Chapter 1162, which authorizes State aid for construction of sewage collection systems.

4. State aid to localities for one-third of the cost of operating and maintaining local sewage treatment plants (Public Health Law, Section 1263(c).

5. An automated monitoring system for surveillance of the quality of the waters in our principal rivers.

6. An expansion of State research in water pollution control methods (Laws of 1965, Chapter 681).

7. Vigorous enforcement of the State's laws against water pollution (Laws of 1965, Chapter 180).

Aside from its jurisdiction to abate and prevent pollution of the waters of the State, the Department of Health enforces the provisions the State Sanitary Code, 10 NYCRR Chapter 1. The Department of Environmental Conservation is required to give its initial approval to the establishment of sewage disposal corporations by municipalities under Article 10 of the Transportation Corporation Law.

The Department of Health is responsible for the sanitary aspect of public water supplies (Public Health Law, Article II, Titles I, II and III). The Department of Health may make rules and regulations for the protection from contamination of public water supplies, conduct investigations, and in any court of competent jurisdiction may enforce prompt compliance with the orders of the Commissioner of Health (Public Health Law, Sections 1100, 1101, 1107).

Water Resources Law. While an outstanding beginning had been made in bringing together the interests of various State administrative units in the water pollution control program, this co-partnership of governmental action was limited initially to one facet of the manifold problems of water resources, namely, quality control.

The present concept of partnership participation that would weave the water pollution abatement program into the "whole fabric" of water resources management, planning, development, conservation and water utilization finally evolved. The new era in water resources management began in New York State in 1960 when the Conservation Law was revised and a new Article 5, called the Water Resources Law, was passed by the Legislature.

The "Declaration of Policy" in Article 5 of the Water Resources Law sets the course to be followed by the State. It declares that the sovereign power to regulate and control the water resources of this State has been, and now is, vested exclusively in the State of New York, except to the extent of any delegation of power to the

United States. It is

> "declared to be the public policy of the State of New York, in recognition of its sovereign duty to conserve and control its water resources for the benefit of all inhabitants of the State, that comprehensive planning be undertaken for the protection, conservation and development of the water resources of this State to the end that they shall not be wasted and shall be adequate to meet the present and future needs for domestic, municipal, agricultural, commercial, industrial, recreational and other public, beneficia purposes.
>
> (3) It is further declared to be the public policy of the State of New York that
>
> (a) the acquisition, storage, diversion and use of water for domestic and municipal purposes shall have priority over all other purposes; and
>
> (b) in addition to other recognized public beneficial uses and control of water as provided by this Article 5 or by any other statute, the regulated acquisition, storage, diversion and use of water for the supplemental irrigation of agricultural lands within this State is a public purpose and use, in the interests of the health and welfare of the people of the State and for their interest" (Conservation Law, Section 401). 8/

The former Water Resources Commission was charged with the responsibility of administering the Water Resources Law (Conservation Law, Section 410). This responsibility is now carried on by the Department of Environmental Conservation. The general jurisdiction of the Department is to

> "exercise its powers and perform its duties in any matter affecting the construction of improvements to or development of water resources for the public health, safety and welfare, including but not limited to the supply of potable waters for the various municipalities and inhabitants thereof, the use of water for industrial and agricultural

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8/ The "Legislative Findings" set forth in Laws of 1960, Chapter 7, are to be considered in the construction and administration of Article 5 of the Conservation Law.

operations, the developed and undeveloped water power of the State, the facilitation of proper drainage and the regulation of flow and improvement of the rivers of the State" (Conservation Law, Section 404).

To exercise effectively its broad statutory powers and duties, the Department in Article 5 is granted the right to make investigations (Section 420), the power of eminent domain (Section 423), the power to sue (Section 421), the right of access to any property public or private, to investigate conditions (Section 422), the right to examine books, records, and accounts (Section 424) and the power to compel the filing of reports with it (Section 425). The Department, to protect the interests of the State, is authorized to cooperate with appropriate agencies of the Federal government and with other governmental bodies and agencies (Section 426).

The Department "may adopt rules in conformity with the statute governing the procedures prescribed or authorized by Article 5" (Section 430). In administering its quasi-judicial functions, the Commission must act in accordance with the hearing procedures set forth in Section 431 of the Conservation Law. The right of judicial review is governed by Section 432.

There is no doubt that the former Water Resources Commission was created "to integrate all policy-making and planning activities of the State with respect to water resources" (Section 410). The Commission was authorized to undertake comprehensive planning for the protection, control, conservation, development and beneficial utilization of the water resources of the State (Section 435). Article 5, Part V of the Conservation Law introduces a new, modern concept of regional water resources planning and development on broad multipurpose, regional, basin-wide dimensions.

In order to stimulate and encourage local participation and cooperation, the Water Resources Commission was empowered to approve petitions from counties, cities, towns or villages to create Regional Water Resources Planning Boards to carry out studies and planning work at the local level, under the technical guidance of the Commission (Conservation Law, Sections 436, 437). The State grants seventy-five percent of the cost of carrying such local planning programs (Section 440). To further encourage local participation, the Conservation Law provides for the State grants to cover the entire cost of preparation of comprehensive area-wide public water supply systems studies and reports (Conservation Law, Section 446 and Article 5, Part 5-A).

Not only in the field of water resources planning but also in the equally important field of water resources management, the former Water Resources Commission acted as the clearing house for virtually all water resources matters in the State.

The broad scope of the former Commission's general jurisdiction is indicated by the following statutory responsibilities. Again, these responsibilities are now being carried on by the Department of Environmental Conservation.

(a) Comprehensive water resources planning. Conservation Law, Article 5, Part V. Creation of Regional Water Resources Planning Boards upon the petitions from counties, cities, towns or villages, to carry out comprehensive planning and studies at the local level, under the technical guidance and financial assistance of the Commission. The State grants seventy-five percent of the cost of carrying out such local planning programs.

(b) Comprehensive area-wide public water supply studies. Conservation Law, Section 446 and Article 5, Part V-A. Administered by the Department of Health upon approval of the Department. Provides for State grants to cover the entire cost of preparation of comprehensive area-wide public water supply systems studies and reports.

(c) Water supply. Conservation Law, Article 5, Part VI, Sections 450-480. Apportionment of the water supply resources of the State among the inhabitants of the State. This includes registration of well drillers on Long Island (Section 475) and the control of commercial and industrial wells on Long Island (Section 476).

(d) Water power. Conservation Law, Article 5, Part VII, Sections 500-524. In regard to hydroelectric power projects, the Department is charged with licensing, fixing, and collection of rental for certain water used for the generation of power.

(e) Drainage. Conservation Law, Article 5, Part VIII, Section 530-575. Drainage improvement districts are authorized to provide for drainage of agricultural lands with prescribed procedures for condemnation of rights-of-way for drainage outlet ditches.

(f) River regulation. Conservation Law, Article 5, Part IX, Title A, Sections 580-600. 9/ River regulating districts may be created upon the approval of the Department for the purpose of

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9/ The Hudson River Regulating District and the Black River Regulating District were consolidated into a single district to include the areas of both such districts, to be known as the Hudson-River-Black River Regulating District and a new board was created under that name (Conservation Law, Section 598, 599, 600).

constructing storage reservoirs to regulate the flow of a stream or river.

(g) River improvements. Conservation Law, Article 5, Part IX, Title B, Sections 610-620. River improvement districts may be created upon the approval of the Department for the purpose of initiating projects to improve the channel, construct dikes, or regulate the flow of a river for the protection from damage by floods. The governing body of the district is the Department.

(h) Joint river regulating, river improvement and drainage improvement regulating districts. Conservation Law, Article 5, Part IX, Title C, Sections 625-627. A river regulating district may be given extended powers and duties if joined together with a river improvement district or drainage improvement district, or both. The joint districts are subject to the general supervision of the Department.

(i) Pollution control. Public Health Law, Article 12. Under the Public Health Law, the Department is required to adopt standards of quality and purity and to classify the State's waters in accordance with considerations of "best usage" in the public interest.

(j) County small watershed protection districts. County Law, Article 5-D. Provision is made for State aid to counties for construction costs of flood prevention work in conjunction with Federal aid available under the "Watershed Protection and Flood Prevention Act" (PL 566). The responsibility for initiating planning, constructing and the operation and maintenance of projects under this Act is vested in county governments. 10/

(k) Flood control projects. Laws of 1936, Chapter 862; McKinney's Unconsolidated Laws, Title 4, Chapter 1, Section 1301-1310. The former Water Resources Commission (now the Department of Environmental Conservation), as successor in interest to the temporary State Flood Control Commission, assists in the institution and consummation of the Federal program of flood control.

(l) Stream protection. Part III-A of Article 5 of the Conservation Law, Chapter 955 of the Laws of 1965, which became effective January 1, 1966, repealed Conservation Law, Section 948, and placed jurisdiction over the protection of streams, dams and docks and structures for impounding waters with the Department.

10/ Laws of 1965, Chapter 799, amends the County Law in relation to State aid for flood prevention and erosion control.

Statutes Relating to Other Departments, Water Districts and Interstate Water Compacts.

(a) Department of Environmental Conservation. Title 4, Chapter 717 of the Laws of 1967, transferred to the former Conservation Department (now Department of Environmental Conservation), effective September 1, 1967, all functions and powers possessed by, and all the obligations and duties of the Superintendent of Public Works and the Department of Public Works pertaining generally to flood control, beach erosion and hurricane protection more particularly described in Chapter 862, Laws of 1936, as amended and Chapter 535, Laws of 1945 as amended.

The New York State Flood Control Law, Chapter 862, Laws of 1936 as amended, authorizes the State to participate in a Federal program of flood control. It empowers the Commissioner or the Department to sign all necessary agreements and to perform all acts required for implementing the State's participation.

Chapter 535, Laws of 1945, as amended, the New York State Beach Protection Law, authorizes the State to construct protective works and improvements upon lands and lands under water owned by any municipality along the Atlantic shoreline of the State, the north shore of Long Island and the easterly shoreline of Staten Island to arrest erosion, alleviate or prevent damage resulting therefrom and as protection from storms. This legislation also provides for State cooperation with the Federal Government when Federal assistance is made available for the construction of projects authorized by this act. 11/

(b) Department of Transportation. The Department of Transportation is responsible for planning, constructing, and maintaining waterways, including the canal system (Canal Law, Section 40; Public Works Law, Section 8). Its waterways activities consist of construction of improvements and operation of locks upon the canal system, maintenance of navigation and safety aids, dredging, bank repair and other maintenance.

(c) Office of General Services. The Commissioner of General Services may grant to adjacent owners, in the exercise of his sound discretion, State lands under water to promote the commerce of the State or for the purpose of beneficial enjoyment by such

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11/ Conservation Law, Sections 1-0801 through 1-0803, Navigation Law, Article II. The Commissioner is authorized to cooperate with Federal and local authorities in the development of projects for the accommodation of recreational boating.

owners or for agricultural purposes, or for public park, beach, street, highway, parkway, playground, recreation or conservation purposes. Includes also the purpose of "construction of beach erosion and hurricane protection projects" pursuant to Chapter 39, Laws of 1962 which amended Chapter 535, Laws of 1945.

The Commissioner may authorize the use and occupation by the United States of lands of the State under water for the purpose of improvement of navigation, including sites for lighthouses, beacons, navy yards and naval stations (Public Lands Law, Section 75, Subdivisions 7 and 8).

If, after investigation and report by the Commissioner of Transportation to the Attorney General, it appears that a grantee has failed to comply with the conditions of the grant, it shall be the duty of the Attorney General to bring action for the annulment of the grant (Public Lands Law, Section 78).

(d) Department of Public Service. Privately owned water utilities with a property value of $30,000 or more are regulated by the Public Service Commission. Its jurisdiction covers rates, charges, rules and regulations for water service, the issuance of all forms of securities (except notes payable at period of not more than twelve months) and service.

Staff members review the books and records, make studies of the original cost of property, make estimates of depreciation, study and make recommendations on rates and charges, also inspect and test water plant facilities and equipment for safe and adequate service, make engineering studies of efficiency and operation, investigate complaints and inspect for compliance with Commission orders. They also advise water companies on operation and rate problems. Public Service Law, Article 1, Section 2, and Article 4-B, Sections 89-a to 89-o.

(e) Power Authority of the State of New York. The Authority was created by legislative enactment in 1931 as an agency of the State to develop the available hydroelectric power resources. The Public Authorities Law declares those parts of the Niagara and St. Lawrence Rivers within the boundaries of the State to be natural resources of the State for the use and development of commerce and navigation in the interest of the people of this State and the United States. The statute establishes the Power Authority of New York State for the purpose of providing for the most beneficial use of these natural resources, preserving and enhancing the scenic beauty of the Niagara Falls and River, for the improving of the Niagara and St. Lawrence Rivers for commerce and navigation and for developing the hydroelectric power resources of the two rivers. Chapter 294, Laws of 1968, which amends the Public Authorities Law authorizes the Power Authority to construct hydro-

electric pumped-storage projects (Public Authorities Law, Article 5, Title I, Sections 1000-1016 and Chapter 294, Laws of 1968).

(f) Local water supply, sewer and drainage districts. Cities counties and towns may establish water supply, sewer and drainage districts. The various statutes specify the local agencies which administer them (General City Law, Section 20; County Law, Article 5-A, Sections 250-276; Town Law, Article 12, Sections 190-208-a).

(g) Soil and water conservation districts. The Soil and Wate Conservation Districts Law permits the board of supervisors of any county to create a county soil and water conservation district whe soil erosion and related problems are of sufficient concern to the public (Soil and Water Conservation District Law, Sections 5, 9).

(h) Interstate water compacts. The State of New York is a party to the following interstate water compacts:

1. Delaware River Basin Compact. Conservation Law, Article VII, Title I, Sections 801-812.

2. Great Lakes Basin Compact. Conservation Law, Article VII, Title II, Sections 815-822.

3. Atlantic States Marine Fisheries Compact. Conservation Law, Article 4, Section 325. Includes the following states along the Atlantic seaboard: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, Georgia and Florida.

4. New England Interstate Water Pollution Control Compact. Public Health Law, Article 11-A.

5. Ohio River Valley Water Sanitation Compact. Public Health Law, Article 11-B. This compact includess the following states: Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania,, Tennessee, Virginia and West Virginia.

6. Tri-State Compact and Interstate Sanitation Commission. Public Health Law, Article 12-B. This compact includes the States of New York, New Jersey and Connecticut.

7. Susquehanna River Basin Compact. New York State authoriza tion was given by Chapter 785, Laws of 1967. The Compact between the States of New York, Maryland and Pennsylvania, and the Federal Government became effective on December 24, 1970.

(i) Use and protection of waters. Conservation Law, Article 5, Part III-A, Sections 429-a - 429-g, Chapter 955, Laws of 1965, added this statute which makes provision for control of the

disturbance of stream beds, excavation or fill of navigable waters and the erection of dams and docks.

(j) Private rights in waters. Conservation Law Article 5, Part III-B, Section 429-j, Chapter 598, Laws of 1966, added this statute which holds that no action for nominal damages or for an injunction shall be maintained because of an alteration in the natural flow, quantity, quality or condition of a natural water course or lake on the ground that such alteration is an infringement of a private right and privilege in the waters, unless such alteration is causing plaintiff harm, or would cause him or it immediate harm if and when begun.

CASE LAW

The State of New York has the duty

> "to control and conserve its water resources for the benefit of all the inhabitants of the State. The public right to the benefit of such resources is an incident of sovereignty. The Legislature, when acting within constitutional limitations and in the interest of the public, may, at will grant, withhold, or condition the privilege to a municipality of taking water from a public source. The Legislature may delegate the performance of its duty to an agency or commission, but the agency can act only within the scope of the powers delegated expressly or by necessary implication to enable it to carry out the powers expressly given." (Matter of City of Syracuse v. Gibbs, 283 N.Y. 275, 283, 28 N.E.2d 835 (1940).)

The Legislature in 1949, when it enacted the Water Pollution Control Law, and once again in 1960 when it enacted the Water Resources Law, did "delegate the performance of its duty to an agency or commission." The following discussion concerns significant court decisions construing and interpreting the Water Pollution Control Law and the Water Resources Law.

A leading New York case in the field of Pollution control is Matter of City of Utica v. Water Pollution Control Board, 5 N.Y.2d 164, 156 N.E.2d 301 (1959), which upheld the constitutionality of Article 12 of the Public Health Law.

The City of Utica brought a proceeding to restrain the Water Pollution Control Board from conducting a hearing with respect to the City's alleged violations of Article 12 of the Public Health Law. The lower Court dismissed the petition and the City appealed on the grounds that the Water Pollution Control Law constitutes an invalid delegation of legislative authority and an invalid grant of power, without adequate standards for the Board's guidance, in violation of the State Constitution (Article III, Section 1).

The Court of Appeals held that the abatement and prevention of water pollution is a matter of State concern and legislation designed to regulate and control such pollution is within the scope of the State's police power. It further held that the Water Pollution Control Law was a constitutional and valid delegation of legislative power. The Court said (p. 170):

> "Having clearly expressed the policy underlying the law, the Legislature was privileged to leave to the Board the power to decide what properties indicate a polluted condition of a particular class of waters and to assign the appropriate classification to any water of the State. Such a power is no more than one to make subordinate rules and determine the facts to which the legislative policy is to apply. In other words, the Legislature is not required to break its plan down into fine detail in order to carry through its purpose of safeguarding the waters of the State."

The Court stated further (p. 171):

> "Having in mind the breadth of the problem of water pollution control, its technical and intricate character, the Legislature could hardly have been more specific in prescribing essential guides. . . To insist upon more precise standards than furnished by the statute before us would be tantamount to declaring that the Legislature's power to control pollution of the State's waters could not be effectively exercised."

In Matter of Town of Waterford, et al. v. Water Pollution Control Board, 5 N.Y.2d 171, 156 N.E.2d 427 (1959), the Water Pollution Control Board had assigned the classification "C" to the waters of the Mohawk River on which the Town and Village of Waterford bordered. The effect of "C" classification was to require those municipalities to construct sewage treatment facilities.

In a proceeding to review the Board's determination, the Town of Waterford contested the classification on the grounds that the Board failed to comply with the standards prescribed by Public Health Law, Section 1209 (now Section 1205); that the Board failed to give any consideration to the fiscal cost and tax burden which enforcement of the assigned classification would impose and that the classification constituted an economic hardship rendering impossible expenditures for other public improvements.

The Court of Appeals held that the Town of Waterford was premature in seeking to raise fiscal considerations at the time of classification. The Court said (p. 179):

> "There is nothing in the statute that requires the Board to consider probable costs or relative priorities as between

municipal public works projects, at the time it adopts a classification for particular waters."

Furthermore, the Court held that the Legislature when it enacted Public Health Law, Section 1224, was fully cognizant of cases involving financial hardship and expressly provided for extensions of time in such situations.

The Town of Waterford also contended that the statutory provision for a public hearing contemplated that witnesses be sworn, testimony be taken, opportunity for cross-examination be given, and findings of fact be made. The Court of Appeals ruled that the procedures followed by the Board were proper and sufficient in the circumstances and stated (p. 184):

"By thus making specific provision for a quasi-judicial type of hear ing with respect to violations of the statute or orders of the Board, in contrast with the general requirement of a public hearing in connection with adopting water classifications, the Legislature in effect distinguished between the different types of public hearings which the Board was required to hold, and impliedly sanctioned the informal type of hearing conducted here. A judicial type of hearing would, of course, be appropriate when punishing individual violations, while it would be madifestly inappropriate in connection with the adoption of a water classification affecting many municipalities, individuals and industries."

The above decision was followed in Matter of Frost White Paper Mills, Inc. v. Harold G. Wilm, et al. constituting the Water Resources Commission, 45 Misc.2d 123, (Sup. Ct., Albany County, 1964) 255 N.Y.S.2d 697.

In Matter of City of Johnstown v. Water Pollution Control Board, 12 A.D.2d 218 (3rd Dept., 1961), 209 N.Y.S.2d 982, the City of Johnstown argued that the Board had no power to classify Cayadutta Creek because it is a non-navigable stream, the title of which is in private riparian owners and that the power of the Board to classify is limited to "waters of the State."

The Court citing Public Health Law, Section 1202, subd. (b), held that it has become settled law that "waters of the State" include all fresh waters in streams, both public and private.

In the case of Matter of Village of Whitehall v. Ingraham, 31 A.D.2d 894 (3rd Dept., 1968), motion for leave to appeal denied, 25 N.Y.2d 739 (1969), the Village challenged a water pollution abatement order of the Commissioner of Health on two grounds: (1) that it should have been made contingent upon receipt by the Village of State and/or Federal aid and (2) that the pollution

abatement timetable established in the order was arbitrary and capricious. In confirming the Commissioner's order the Court found no obligation on the part of the State to make pollution abatement orders contingent upon the receipt of State and/or Federal funds, as contended by the Village, and further found that the timetable of abatement in the Commissioner's order was within the broad power and authority of the Commissioner.

In legal actions brought to enforce water pollution abatement orders and orders for construction of public water supply treatment facilities, the trend of the Courts has been to impose programs for compliance with water pollution abatement orders and orders for construction of water supply treatment facilities and to assess statutory penalties. New York State Water Resources Commission v. City of Oswego, 50 Misc. 2d 356 (Sup. Ct., Oswego Co., 1966), 270 N.Y.S.2d 544; Diamond v. Mobil Oil Corp., 65 Misc. 2d 75 (Sup. Ct., Erie Co., 1970); Diamond v. Town of West Seneca (Sup. Ct., Erie Co., 1971) [not yet reported]; many unreported cases.

In the City of Oswego, case, supra, the Court stated that imposition of a timetable for compliance represented: "a reasonable compromise between the necessity that some action be taken and the impossibility of the City being able to act instantly" (p. 357).

In People v. Port of N.Y. Auth., 64 Misc. 2d 563 (Sup. Ct., N.Y. Co., 1970), the Court held that claims by the defendant that it is only one of many contributors to the pollution of Jamaica Bay and that the pollution has continued for many years did not constitute defenses to the State's pollution abatement action.

In the recent case of Salamar Builders Corp. v. Tuttle, 29 N.Y.2d 221 (1971), the Court of Appeals held that the prospect of water pollution from inadequate spacing of septic tanks in a rocky and hilly terrain justified the Town's amendment of its zoning ordinance to increase minimum residential lot areas from one to 1 1/2 acres.

The Water Resources Law, Article 5 of the Conservation Law, given broad regulatory powers over the public water supplies of the whole State to the Water Resources Commission.

The case of Great Neck Water Authority v. Citizens Water Supply Company of Newton, 12 N.Y.2d 167, 187, N.E.2d 786 (1962), illustrates the principle that the Commission's broad regulatory powers extend to existing public water supply systems.

The plaintiff Authority, a public benefit corporation, brought a condemnation proceeding against the defendant Company to acquite its existing water supply system. The defendant Company moved for

summary judgment on the ground that the Authority, before commencing its condemnation proceeding, had not obtained the prior approval of the former Water Resources Commission for the taking.

The Court granted the motion and held that although this case involved a transfer of ownership of an existing water supply system, nevertheless, prior approval by the former Water Resources Commission was a prerequisite to the bringing of the condemnation proceeding. The Court stated (pp. 174-175):

> "Although the phrase 'water supply' is not defined in the statute, it reasonably includes such a complex of lands, waters thereunder, structures and equipment as is owned by the Company and used by it in selling water to the public. Section 450 thus requires permission for the taking of a water supply owned by an existing corporation as well as for the acquisition of an additional water supply from an existing approved source or lands for a new or additional water source or the utilization thereof. * * * Such a construction of the Conservation Law is necessary to carry out the legislative purpose of giving the Water Resources Commission broad regulatory powers over the potable water supply of the whole State (see Conservation Law, Sections 435, 450, 451). * * * The overall regulatory purpose cannot be achieved unless such determinations are made as to sales of existing facilities as well as the setting up of new ones."

River regulating districts may be created by order of the Water Power and Control Commission (the predecessor of the Water Resources Commission) as an agency of the State subject to the control of the Legislature, for the sole public purpose of constructing storage reservoirs for river regulation. Black River Regulating District v. Adirondack League Club, 307 N.Y. 475, 121 N.E.2d 428 (1954); app. dism. 76 S. Ct. 780, 351 U.S. 922, 100 L. Ed. 1453 (1956).

Matter of Suffolk County Water Authority v. Water Power and Control Commission, 12 A.D.2d 198 (3rd Dept., 1961), 209 N.Y.S.2d 978, concerns the problem of allocating authority between two competing public water supply agencies to serve a given territory.

The former Water Resources Commission initially approved a proposal by the Suffolk County Water Authority to extend its service area. The Commission's order reserved "the right to alter the boundaries of this area; to authorize the construction of other water works systems therein, both publicly and privately owned; and to authorize the development of other sources of water supply, both within and without said area for the supply of water in said area."

Subsequently, the Commission approved an application of the Town of Huntington to authorize extension of a town water district into a relatively small portion of the same territory previously

approved to be serviced by the Suffolk County Water Authority.

The issue was the legal right of the Water Power and Control Commission (the predecessor of the Water Resources Commission) to rearrange its formal approval and authorization given to the original plan of the Suffolk County Water Authority. The Court confirmed the Commission's power to make such a change and said (p. 202):

> "The problem of allocation of authority to serve a given territory is one involving an advised and specialized administrative judgment which must take into consideration a balancing of the needs of existing areas served, the contiguous or remote relationship of facilities to service; the geographic symmetry and arrangement of the territory in the light of present and future needs; the probable growth of territory; the nature and interests of the public and governmental agencies concerned; the available water; and a number of other related questions.
>
> "The broad responsibility to make determinations affecting the access to water resources of the State rests by Law in the commission (Conservation Law, Article 5 (Water Resources Law)). * * *."

The above decision was followed in New Highway Water Works Co., Inc. v. Water Resources Commission, 14 A.D.2d 973 (3rd Dept., 1961), 221 N.Y.S.2d 459.

Section 451 of the Conservation Law requires that any plan for new or additional sources of water supply must meet the following standards: it must be justified by public necessity; it must be just and equitable to affected municipalities and people; and it must make fair and equitable provisions for the determination and payment of all legal damages.

The following cases discuss the application of these statutory standards: New Highway Water Works Co., Inc. v. Water Resources Commission, 14 A.D.2d 973 (3rd Dept. 1961), 221 N.Y.S.2d 459; Great Neck Water Authority v. Water Resources Commission, 22 A.D.2d 78 (3rd Dept., 1964), 253 N.Y.S.2d 754; Rockland County Anti-Reservoir Ass'n v. Duryea, et al., 282 A.D. 457 (3rd Dept., 1953), 123 N.Y.S. 2d 445; Spring Valley Water Works and Supply Company v. Wilm, et al., constituting the Water Power and Control Commission, 14 A.D. 2d 658 (3rd Dept., 1961), 218 N.Y.S.2d 800.

In the case of Sperry Rand v. Water Resources Comm., 30 A.D.2d 276 (3rd Dept., 1968), motion for leave to appeal denied 24 N.Y.2d 737 (1969), an owner of premises adjacent to those of petitioner Sperry Rand was given permission by the Water Resources Commission to sink a well upon its property for air conditioning purposes,

pursuant to Conservation Law, Section 476. Sperry Rand objected that its interests would be adversely affected in that the underground water supply used by it for similar purposes would be heated by the water returned to the ground by its neighbor.

The Commission found that the heating of the water returned to the ground might or could result in raising the temperature of water utilized by Sperry Rand and thereby cause damage to Sperry Rand but found that such a possibility did not prevent the granting of the application.

The Court confirmed the Commission's determination and stated (at p. 279):

> "The respondent is correct when it argues that its concern with an application for a permit under article 5 is properly with the public interest and not with the competing interests of two adjacent landowners in a water supply for their purely private interests. The resolution of such private interests has been left by article 5 (see § 429-j) to the parties themselves and such redress as the courts of this State may provide. We assume that the contention of an objectant as to the effect an approval will have on his private interests is to be considered in determining the public interest issue, but the weight to be given to the proof submitted by a private interest is for the commission, and it appears that the commission has found the proposed well to be in the public interest for good and sufficient reasons."

The principal that the Water Resources Commission is concerned with the public interest, rather than with competing private interests, was also set forth in the case of Mtr. of Allen v. N.Y.S. Water Comm., 59 Misc. 2d 428 (Sup. Ct., Albany Co., 1969). The Court held that it would not set aside a permit to construct a dam on the ground that such a dam would result in higher like levels, and thereby damage the private riparian rights of the objectors. The Court noted that the permit specified that it did not authorize the impairment of private riparian rights and that the objectors had recourse to the Court to prevent damage to such rights.

The principal that protection of fish and wildlife is a matter of "public interest" is clearly enunciated in the case of Matter of Bernhard v. Caso, 19 N.Y.2d 192 (1967), in which the Court of Appeals held that the town could deny a permit to dredge in town-owned lands under water on the ground that the dredging would be harmful to the marine resources of the area.

Attorney General's Opinions. 12/

(a) "Public water supply" construed. A water supply from a private well conveyed through pipes by a pumping system to from twelve to fifteen houses is a "public water supply" within the meaning of Section 88 of the Public Health Law, notwithstanding the fact that the water is furnished without charge.

135 Op. Atty. Gen. 365

(b) Lake levels--Saranac, Tupper, and Kushaqua--right of Department of Transportation to permit a lowering of the levels. The Department of Transportation has no authority to permit the levels of Saranac, Tupper and Kushaqua Lakes to be lowered or interfered with.

1942 Op. Atty. Gen. 233

(c) Canal Law, Sections 10,100; Conservation Law, Sections 614-619; authority to permit construction of flashboards authority to charge for use of surplus waters. The Commissioner of Transportation has general supervision of the canal system and may permit construction of flashboards on dams if beneficial to the canal system (Canal Law, Section 10, subds. 1, 9 and 23). A license to use surplus canal water may be granted by the Water Power and Control Commission with the approval of the Commissioner of Transportation pursuant to the provisions of the Conservation Law, Sections 614-619, inclusive, and a charge may be made therefor.

1944 Op. Atty. Gen. 316

(d) Flood control. There is no constitutional objection to use of condemnation power by State to acquire Indian reservation lands necessary for a flood control project, but specific legislation is recommended.

1944 Op. Atty. Gen. 376

(e) Conservation Law, water supply. The Water Power and Control Commission (the predecessor of the Water Resources Commission) does not have retained jurisdiction to render a decision requiring the City of Utica to install mains in a Water Supply District for fire protection purposes.

1954 Op. Atty. Gen. 160

12/ For additional opinions of Attorney General, see Cululative Index 1940-1942 and Index for 1963-1964.

(f) Conservation Law, water supply. Water Power and Control Commission (the predecessor of the Water Resources Commission) lacks jurisdiction to approve plans of foreign municipal corporation to take and acquire an additional water supply in this State for use in other states.

1955 Op. Atty. Gen. 183

(g) General Corporation Law, Section 3; Town Law, Article 12--water district--not a public corporation. A water district subject to Town Law, Article 12, has no authority to contract indebtedness and, therfore, is not a public corporation as defined by General Corporation Law, Section 3.

1959 Op. Atty. Gen. 238

(h) Public Lands Law, Section 3. The Commission of General Services may license and regulate the taking of materials in State lands under water, but this does not include that part of the bed of Cattaraugus Creek forming the southerly boundary of Erie County nor the bed of Lake Erie bordering Chautauqua County, nor is such action authorized under Conservation Law, Section 179.

1963 Op. Atty. Gen. 192

(i) Public Health Law, Article 12, Section 1303; Conservation Law, Section 410; Code of Criminal Procedures, Section 56 (35); Penal Law, Section 1759. Existing remedies and rights of action, including enforcement procedures by local officials, to suppress or abate water pollution were not displaced by the enactment of Public Health Law, Article 12. That statute, effective January 1, 1962, created additional remedies which are available when the State Department of Health determines that violation of Article 12 warrants State action.

1964 Op. Atty. Gen. 124

(j) Conservation Law, §476-approval required for all large wells in Long Island counties. "One property", parts of which are leased by the owner thereof to another party or parties, is not converted into separate properties by the lease arrangement, but remains as "one property" within the meaning of Conservation Law, Section 476(1), which requires Commission approval of new wells where the total pumping capacities of well(s) on "one" property exceeds 45 gallons per minute.

1966 Op. Atty. Gen. 14

(k) Conservation Law, Article V, Part III-A (§§429-a through g)-use and protection of waters. The provisions of Conservation Law,

Article V, Part III-A, §§ 429-a, 429-c, 429-d, 429-e, 429-f and 429-g apply to Nassau and Suffolk Counties, as well as to the other counties in the State. The provisions of § 429-b do not apply to Nassau and Suffolk Counties.

1966 Op. Atty. Gen. 16

(l) Conservation Law, Article V (Water Resources Law). The State of New York can regulate the water level of Lake Mahopac only if the Legislature authorizes acquisition of the outlet to the Lake together with easements from all riparian owners abutting and downstream from the Lake to the Amawalk Reservoir of the City of New York.

Op. Atty. Gen. April 19, 1966 (unreported)

(m) Village Law, § 89, subd. (15); Conservation Law, §§ 429-a, j(1)(5). Under the common law, a village, as an upstream riparian owner, may not divert the flow of flood water from a stream in such manner as to unreasonably increase the flow of another stream without subjecting itself to legal action by a downstream owner of the stream in its original channel or the downstream owners on the new receiving waters. However, Conservation Law, § 429-j might form the basis for a declaratory judgment against affected riparian owners or as a defense to an action by such owners if, as a matter of fact, it can be established that the diversion is "a harmless interference".

Op. Atty. Gen. June 18, 1968 (unreported)

Water Rights.

(a) Doctrine. The common law doctrine of riparian rights has been the basic New York water law from the earliest times. Under the doctrine of riparian rights neither sovereign nor subject can acquire anything more than a mere usufructuary right in flowing water (Niagara Mohawk Power Corp. v. Federal Power Commission, 202 F.2d 190 (U. S. Ct. of App., Dist. of Columbia, 1952)).

Riparian rights link water use to ownership of the land along or through which the water flows. Holders of riparian rights can use the water associated with their land subject only to "reasonable" consideration of the landowners downstream. Riparian rights may be exercised or not, as the landowner prefers. Either way, they remain in force always subject to the "reasonable" needs of other riparian owners and are freely transferable with the land ownership.

"The states following the riparian doctrine are divided into two groups. One group follows the so-called natural flow theory, another group follows the so-called reasonable use theory. The group still following the natural flow theory has become definitely a minority group. The group following the reasonable use theory has become definitely the majority group; . . ." 13/

One cannot be certain which group New York is in "because the judicial expressions are conflicting." 14/

The natural flow version of the riparian rights doctrine

"forbids a riparian owner, except when making a domestic or natural use, to alter materially the natural condition of a watercourse or lake, even though such alteration will cause no immediate harm. . . . The reasonable use version of the riparian doctrine . . . permits a material alteration of the natural condition of a watercourse or lake, even for the artificial or non-domestic uses, and even though the alteration causes harm to a riparian owner, provided the alteration is reasonable in view of all the circumstances; . . ." 15/

The general rule governing the rights of riparian owners are set forth in the leading case of Strobel v. The Kerr Salt Company, 164 N.Y. 303, 58 N.E. 142 (1900) (pp. 320-321):

"A riparian owner is entitled to a reasonable use of the water flowing by his premises in a natural stream, as an incident to his ownership of the soil, and to have it transmitted to him without sensible alteration in quality or unreasonable diminution in quantity. While he does not own the running water, he has the right to reasonable use of it as it passes by his land. As all other owners upon the same stream have the right, the right of no one is absolute, but is qualified by the right of the others to have the stream substantially preserved in its natural size, flow and purity, and to protection against

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13/ Farnham, William F., Report of the Temporary State Commission on Water Resources Planning, 1965, Leg. Doc. (1965) No. 27, p. 132.

14/ Ibid.

15/ Cornell Water Resources Center Report, Appendix "B", pp. 226-227 of the Report of the Temporary State Commission on Water Resources Planning, 1965. See note 13, ante.

material diversion or pollution. This is the common right of all, which must not be interfered with by any. . . . Consumption by watering cattle, temporary detention by dams in order to run machinery, irrigation when not out of proportion to the size of the stream, and some other familiar uses, although in fact a diversion of the water involving some loss, are not regarded as an unlawful diversion, but are allowed as a necessary incident to the use in order to effect the highest average benefit to all the riparian owners. As the enjoyment of each must be according to his opportunity and the upper owner has the first chance, the lower owners must submit to such loss as is caused by reasonable use. Surrounding circumstances, such as the size and velocity of the stream, the usage of the country, the extent of the injury, convenience in doing business and the indispensable public necessity of cities and villages for drainage, are also taken into consideration, so that a use which, under certain circumstances, is held reasonable, under different circumstances would be held unreasonable."

There has been a conflict of authority in New York judicial decisions as to whether one can enjoin an interference with the natural condition of water courses and lakes which, although presently harmless, might become harmful in the future. The weight of opinion held that a riparian owner has the right to enjoin a substantial alteration of the stream flow, even though harmless, in conformity with the doctrine that stream water must be allowed to continue to flow as it has been accustomed to flow. 16/

Among the New York cases expressly recognizing the prevalence of this doctrine are: Clinton v. Myers, 46 N. Y. 511, 7 Am. Rep. 373 (1871); Bullard v. Saratoga Victory Mfg. Co., 77 N. Y. 525 (1879); Strobel v. Kerr Salt Co., 164 N. Y. 303, 58 N. E. 674 (1887); Neal v. City of Rochester, 156 N. Y. 213, 50 N. E. 803 (1898); Townsend v. Bell, 62 Hun 306 (1891); N. Y. Rubber Co. v. Rothery, 132 N. Y. 293, 30 N. Y. 841 (1892); Gilzinger v. Saugerties Water Co., 66 Hun 173 (1892), affd. on opin. below, 142 N. Y. 633, 37 N. E. 566 (1894); Amsterdam Knitting Co., v. Dean, 162 N. Y. 278, 6 N. E. 757 (1900); Mann v. Willey, 51 App. Div. 169, 64 N. Y. Supp. 589 (1900), affd. w.o. 168 N. Y. 644, 61 N. E. 1131 (1901). 17/

16/ Id. at p. 208.

17/ For an excellent discussion of these cases see Cornell Water Resources Center Report, note 15 ante, at pp. 208-212.

But see Knauth v. Erie Railroad Company, 219 App. Div. 83, 219 N. Y. Supp. 206 (1926), which held that an interference with the natural condition of a watercourse is not actionable until it causes harm. 18/

This conflict finally was reduced by Chapter 598, Laws of 1966, which holds that no action shall be maintainable because of an alteration in the course or flow of waters unless an alteration is causing a plaintiff harm, or would cause him immediate harm if and when begun.

In several statutes there are provisions expressly preserving riparian rights - even stating that nothing contained in the statute shall be so construed as to impair riparian rights. (See Conservation Law, Section 441, subd. (1), par. (f), Section 502, subd. (1); Public Health Law, Sections 1167, 1260, 1261)

(b) Surface water. The New York case law

> "with respect to the use of surface water seems to be in accord with the generally prevailing view that any landowner is free to retain and consume for any useful purpose all of the surface water which forms on his land, regardless of harm to others and without obligation to confine his retention and consumption to amounts which are reasonable in view of the needs of others." 19/

In a word, judicial expressions "indicate you can do what you like with surface waters. 20/

As to diffused surface water (rains, floods, snow) which has become separate from a stream, the rule is the landowner can capture all the diffused surface water which he wants and make such use of it as he desires. However, if the waters involved constitutes part of a stream, a riparian owner would only have his riparian rights including the privilege of reasonable use and the right that this privilege should be enjoyed without unreasonable interference. 21/

(c) Groundwater. The riparian doctrine as outlined above in

18/ Id. at p. 215

19/ See note 15, ante, at p. 247.

20/ See note 13, ante, at p. 135.

21/ Cornell Water Resources Center Report at pp. 243-245.

"Surface Water" applies to subterranean streams.

With respect to the use of percolating water, a landowner may take and use all such water as he can get by reliance on natural forces or by pumping, even though he causes damages to his neighbo provided he uses it on his own land, and provided the water is actually percolating water and not drawn from a natural watercours above or below ground.

The New York Courts have held that interception of percolating water which would feed a stream unless otherwise diverted, can be unreasonable and unlawful. Smith v. City of Brooklyn, 160 N. Y. 357, 54 N. E. 787, 45 LRA 664 (1899); Stevens v. Spring Valley Wat Works, 42 Misc. 2d 86 (Sup. Ct., App. Term, 2nd Dept., 1964), 247 N. Y. S. 2d 503. 22/

(d) Access to Lakes and streams. In several statutes there are provisions expressly granting the right of access to administrative agencies or officials to enable them to perform their statutory duties, in language such as this (Conservation Law, Section 422):

> "The Water Resources Commission (now Department of Environmental Conservation) or its duly appointed agents shall have the right to enter at all times in or upon any property, publi or private, for the purpose of inspecting or investigating con ditions relating to matters within the jurisdiction of the Commission." (See also Conservation Law, Sections 175, 437, subd. (14), 584, subd. (2); Matter of Suffolk County Water Authority v. Water Power and Control Commission, 12 A. D. 2d 198, 202 (3rd Dept., 1961), 209 N. Y. S. 2d 978).

A right to enter is expressly reserved to the Commissioner of Health (now Commissioner of Environmental Conservation) in Article 12 of the Public Health Law, Section 1210, subd. (5) inregard to water pollution abatement and to the Commissioner of Health in Article 11 of the Public Health Law, Section 1101 in regard to public water supplies.

(e) Diversions between basins. The Conservation Law generall regulates and controls diversions between basins.

Article V, Part VI of the Conservation Law requires the prior approval of the Water Resources Commission (now Department of

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22/ Id. at p. 248.

Environmental Conservation) to any diversions, between two watersheds located wholly within the State, for public water supply purposes.

Conservation Law, Section 452, subd. (1) prohibits the diversion of the water supply of New York State into any other state except where the written consent of the Water Resources Commission (now Department of Environmental Conservation) has been obtained. The statute states:

> "No person or public corporation shall transport or carry through pipes, conduits, ditches or canals the waters of any fresh water lake, pond, brook, river, stream, or creek in this state or any well, subsurface or percolating waters of this state into any other state for use therein...."

Interstate water compacts contain provisions which regulate and control any diversion or furnishing of water authorized by or made pursuant to the compact.

(f) Eminent domain. Article 1, Section 7, subd. (a) of the New York State Constitution provides that "Private property shall not be taken for public use without just compensation." (See also Article IX, Section 1, subd. (e).)

In New York State a riparian right is a property right. United Paper Board Company v. Iroquois Pulp and Paper Company 226 N. Y. 38, 123 N. E. 200 (1919); Matter of Van Etten v. City of New York, 226 N. Y. 483, 125 N. E. 201 (1919). 23/

Waters cannot be diverted for public consumption without payment of damages to riparian owners. Smith v. City of Rochester, 92 N. 463 (1883); see also, Water Power and Control Commission v. Niagara Falls Power Company, 262 App. Div. 460 (4th Dept. 1941); affd. 289 N. Y. 353, 45 N. E. 2d 907 (1942).

In Article V of the Conservation Law there are several provisions expressly granting the right of eminent domain to the Water Resources Commission (now Department of Environmental Conservation [Conservation Law, Section 423; see also, Sections 512, 514 and 58

23/ Id. p. 228.

TABLE S-1(NY)

NEW YORK CONSTITUTIONAL
AND
STATUTORY REFERENCES ON WATER

Statute	Subject
Constitution, Article I, Section 7(a)	Eminent Domain
Constitution, Article I, Section 7(d)	Drainage of agricultural lands
Constitution, Article VIII Section 2-a, 5(E)	Local Finance - Indebtedness authorized for water supply, sewage disposal and drainage systems, exlusion from debt limitation
Constitution, Article XIV, Section 1	Forest Preserve Lands - to be forever kept wild
Constitution, Article XIV, Section 2	Reservoirs - Forest Preserve Lands
Constitution, Article XV; Canal Law, Section 40; Transportation Law, Section 14	Canals
Constitution, Article XVII, Section 3	Public Health
Civil Practice Law and Rules, Section 506(b) (2)	Special proceedings against Water Resources Board - where commenced
Conservation Law, Article V	Water Resources Law - Water Resources Commission
Conservation Law, Article VI	Division of Water Resources (Dept. of Environmental Conservation)
County Law, Article 5-A, Sections 250-276	County Water, Sewer Drainage and Refuse Districts
County Law, Article 5-D, Sections 299-1-299-x	County Small Watershed Protection Districts
General City Law, Section 20	City water supply and sewage systems and flood control projects
General Municipal Law, Section 119-O	Joint municipal water, or drainage projects

TABLE S-1(NY) Cont'd

Statute	Subject
General Municipal Law, Section 119-p	Projects relating to the use of atmospheric water resources
General Municipal Law, Section 120-u	Mutual aid for water services
General Municipal Law, Section 462	Interlocal agreements authorized for supply of water, sewage disposal and storm drainage
Local Finance Law, Section 11.00	Time limitation on which indebtedness may be contracted for water supply systems river regulating reservoirs, waterway improvement and drainage, sewer systems, dredging and construction to make streams navigable and for flood protection
Local Finance Law, Section 15	Indebtedness relative to municipal-cooperative activities - joint water sewage or drainage projects
Local Finance Law, Sections 34.00, 36.00	Bond resolution to provide sewage treatment facilities not subject to referendum
Local Finance Law, Section 136.00	Statement of total debt by municipality - water and sewage indebtedness may be deducted
Navigation Law, Article 11, Sections 140-144	Improvement and preservation of waterway - harbors of refuge and marine facilities
Navigation Law, Article 11, Section 33c	Regulating disposal of sewage; littering of waterways.
New York State Sanitary Code, (10 N.Y.C.R.R., Chapter 1)	New York State Sanitary Code
Public Authorities Law, Article 5, Title 1, Sections 1000-1016	Power Authority of the State of New York
Public Health Law, Article 11	Public water supplies sewerage and sewage control

TABLE S-1(NY) Cont'd

Statute	Subject
Public Health Law, Article 12	Water Pollution Control Law
Public Lands Law, Article 6, Sections 75-78	Grants of lands under water
Public Service Law, Article 4-B, Sections 89-a to 89-o	Regulation of private water-works corporation
Real Property Tax Law, Section 477	Tax exemption for industrial waste treatment facilities
Real Property Tax Law, Section 490	Exemption from special ad valorem levies and special assessments - water supply, sewer systems, waterways and drainage improvements
Real Property Tax Law, Section 566	Dam and reservoirs - assessment procedure
Soil and Water Conservation Districts Law	Soil and water conservation districts
State Finance Law, Section 61 (18)	Probable life of sewage treatment facilities
State Finance Law, Section 97-h	Pure waters debt fund
State Law, Article 3, Sections 20-38	State lands ceded to the United States
Tax Law, Sections 208, 612, 683 706, 1083	Deduction of certain expenditures for industrial waste treatment facilities
Town Law, Article 12, Sections 190-208-a	Town water supply sewer and drainage districts and special improvements
Transportation Corporation Law, Article 10, Sections 115-124	Sewage disposal corporations
Village Law, Sections 89, 220-239	Village sewage, water supply systems and water works

TABLE S-1(NY) Cont'd

Statute	Subject
Laws of 1936, Chapter 16; Laws of 1936, Chapter 862; McKinney's 1968 Unconsolidated Laws, Title 4, Chap. 1, Secs. 1301-1310;	Flood control
Laws of 1927, Chapter 654; McKinney's 1965 Unconsolidated Laws, Title 16, Chapter 19, Sections 6121-6143	Municipal joint water works systems
Laws of 1953, Chapter 882; McKinney's 1965 Unconsolidated Laws, Title 29	Waterfront Employment Regulation
Laws of 1921, Chapter 154; McKinney's 1965 Unconsolidated Laws, Title 17, Chapter 1, Section 6401 et seq.	Port of New York Authority
Conservation Law, Article VII, Title I, Sections 801-812; Laws of 1952, Chapter 701; McKinney's 1965 Unconsolidated Laws, Title 4, Chapter 8, Sections 1581-1584	Interstate water compacts: Delaware River Basin Compact
Laws of 1945, Chap. 535; McKinney's 1968 Unconsolidated Laws, Title 4, Chap. 7, Sections 1531-1539	Beach Erosion and Hurricane Protection
Conservation Law, Article VII, Title II, Sections 815-822	Great Lakes Basin Compact
Conservation Law, Article IV, Section 325	Atlantic States Marine Fisheries Compact
Public Health Law, Article 11-A Sections 1180-1186	New England Interstate Water Pollution Control Compact
Public Health Law, Article 11-B, Sections 1190-1198	Ohio River Valley Water Sanitation Compact
Public Health Law, Article 12-B, Sections 1299-1299-1	Tri-State Compact and Interstate Sanitation Commission
Laws of 1967, Title 4, Chapter 717	Flood Control & Beach Erosion Control
Conservation Law, Article V Part III-A Chap. 955 - Laws of 1965	Stream Protection

APPENDIX III

POLITICAL SUBDIVISIONS

The structure of local government in New York is remarkable for the multiplicity of types of political subdivisions employed. The State is divided into 62 counties and the counties are in turn divided into varying numbers of cities and towns. Town boundaries are contiguous so that every portion of the State outside of the corporate limits of a city is included in a town. Two types of municipal corporations exist in New York State - the village and the city.

The 62 counties of New York State presently contain 932 towns, 554 villages and 62 cities. The revenues to support these governments come, in the main, from taxes on property and districts, State aid, fees, licenses and fines. Local sales and use taxes are imposed by a few counties and cities for additional revenue.

COUNTIES

A Board of Supervisors or County Legislature is the usual governing and legislative body in a county, with the exception of the five counties (boroughs) that comprise the City of New York. New York City is governed by a City Council made up of representatives from each borough.

A County Board of Supervisors generally consists of at least one supervisor from each town and from any cities that may lie within that county. A County Legislature is generally apportioned according to population with a number of legislative districts. Several counties have an elected county executive who serves as chief administrative officer and shares policy-making powers with the Board or Legislature through the power of veto.

TOWNS

A town is governed by an elected Town Board, presided over by the elected Supervisor. The other town officials vary considerably from town to town, and are usually elected, although some are appointed.

Towns are divided into several classes, based upon population and assessed valuation. The larger towns are permitted a more complex governmental structure and have authority to perform more extensive services for their residents.

Towns are responsible for numerous local governmental services, such as road construction and maintenance, but are not geared to

provide municipal-type services to population centers. Such services may be performed by special improvement districts formed for the purpose, or by municipalities.

VILLAGES

A village is incorporated after petition of, and election by, the residents of the community. Villages are created under the Village Law, and all have essentially the same governmental structure and authority. This Law establishes several classes of villages, based on population, and their detailed organization and powers vary from class to class.

Villages, unlike cities, remain a part of the town. Village residents vote in town elections, pay town taxes and receive town services.

The village is governed by an elected Mayor and Board of Trustees, who appoint a number of other officials. Village government may more easily provide municipal services such as water supply, sewage disposal, fire and police protection, street lighting, etc., than town government.

CITIES

Cities, like villages, are municipal corporations, created at the will of the residents of the communities. Unlike a village, each city has its own charter, drafted to meet specific needs of the area. Thus, the governmental structure and powers of cities vary greatly. Cities are completely divorced from the towns, but each city elects one or more representative to a County Legislature or in some cases a County Board of Supervisors.

One normally thinks of cities as being larger and wealthier than villages. This is not always the case - some cities have fewer than 3,000 inhabitants and some villages approach a population of 40,000.

The governmental structure of cities varies greatly but generally consists of an elected council with either an elected mayor or an appointed city manager. A variety of other officials, mostly appointed, administers the various departments.

Cities have extremely broad powers for local governmental activities. Under the City Home Rule Law, a city may virtually take any measures not in conflict with the State Law or Constitution.

APPENDIX IV

SPECIAL PURPOSE DISTRICTS

SOIL AND WATER CONSERVATION DISTRICTS

If soil erosion and related problems cause sufficient public concern, a County Board of Supervisors can set up a Soil and Water Conservation District. The directors of such a district consist of two members from the Board of Supervisors, two practical farmers and a lay member representing non-agricultural interests.

These districts are empowered to make necessary surveys and investigations and carry out such preventive and control measures as are indicated to reduce damages due to floodwaters, erosion and sedimentation.

The State Soil and Water Conservation Committee coordinates the work of these districts. The State committee cooperates with the Soil Conservation Service of the U.S.D.A. and allots federal aid funds to the several districts.

COUNTY SMALL WATERSHED PROTECTION DISTRICTS

A County Board of Supervisors may, with the approval of the Department of Environmental Conservation, form a County Small Watershed Protection District for the purpose of constructing appropriate flood prevention measures under the PL 566 program. Federal grants, administered by the Soil Conservation Service, pay the entire construction cost of such facilities attributable to flood prevention. Remaining costs, including all land and right of way costs, are paid by local tax funds. The State reimburses the counties involved 50% of the expenditures for the land, easements and rights-of-way required for construction of the flood prevention facilities.

The functions of a County Small Watershed Protection District may be carried out directly by the County Board of Supervisors without the establishment of a District.

DRAINAGE IMPROVEMENT DISTRICTS

When it is deemed wise to drain certain agricultural land to make it more productive, or for reasons of public health or safety, a Drainage Improvement District may be formed by the owners, or lessees, of the property to be improved.

These persons first petition the Department of Environmental Conservation for the right to initiate such a project. When the

right to proceed is granted, a public corporation is formed by the landowners, each of whom has an equal vote.

These districts construct and maintain such drainage projects as seem desirable. The costs of these projects are assessed against the lands benefited.

OTHER SPECIAL PURPOSE DISTRICTS

A District can also be created to provide for water supply, fire protection, sewerage, recreation or other purposes that benefit the public. The District can be initiated by any organization in the affected area and its cost is underwritten by the District itself.

The administration of county districts is the same as for small watersheds protection districts. Town Boards normally administer the affairs of a district within a town.

The Conservation Law provides for the formation of river regulating districts and one such agency, the Hudson-River-Black River Regulating District is in operation. The same law permits the establishment of districts for river improvement, drainage improvement and combined river regulation and river improvement.

STATE OF NEW JERSEY

Prepared by

State of New Jersey
Department of Environmental Protection
Division of Water Resources
Trenton, New Jersey

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STATE OF NEW JERSEY

I - CASE LAW

RIPARIAN DOCTRINE

The State of New Jersey follows the riparian doctrine of the Common Law, modified by the court decisions, in dealing with both surface and ground water. Each riparian owner, one who owns land contiguous to a water ccurse, possesses an equal right to the use of the water as it runs by his land without diminution or alteration. This natural flow doctrine (see Merrit v. Parker, 1 N.J. L. 460 (1795)) is augmented by that of reasonable use (see Armstrong v. Francis Corp., 20 N.J. 320, 120 A.2d (1956)).

Two limits on reasonable use have been established for certain areas, in 1947 at 100,000 gallons per day (N.J.S.A. 58:4A-1 to 4), and 1963 at 70 gallons per minute (N.J.S.A. 58:1-35 to 50). These limits were necessary because the increased diversion of groundwater in parts of the State exceeded the natural replenishment of the water. Permits must be obtained from the Division of Water Resources for use above these limits in the delineated areas.

Much of this material may be found in much greater detail in the article by Eva Morreale Hanks entitled The Law of Water in New Jersey (22 Rutgers Law Review 621 (1968)).

DIVERSIONS

There is no prohibition of nonconsumptive diversions, provided the water is returned at a point in the stream where the diversion will not affect downstream riparians. The diversion may be enjoined if the substituted water is so insufficient or profuse that it thereby injures the lower riparian (East Jersey Water Co. v. Bigelow, 60 N.J.L. 201, 38 A. 631 (E. & A. 1897)), or if the substituted water is polluted (Acquackanonk Water Company v. Watson, 29 N.J. Eq. 366 (E. & A. 1878)).

Consumptive uses are permitted for certain purposes and within certain limitations, e.g., domestic uses and irrigation are limited to reasonable use. The problems remain in interpreting domestic use and reasonableness, or reasonable business diversion in the case of a riparian business.

In cases on diversion for sale and use of water on nonriparian land the natural flow doctrine is strictly adhered to and there need not be actual injury: the riparian right does not include the right to merchandise water. (Mayor of Paterson v. East Jersey Water Co.,

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aff'd 77 N.J. Eq. 588, 78 A. 1134 (E. & A. 1910). The water of the State is considered public and the State alone is empowered to allocate water in the interest of the general public. Where the diversion, detention, or addition of water is for purposes unconnected with the merchandising of water, New Jersey judges the defendants' activities by standards of reasonableness, requiring that the plaintiff shows actual damages as the prerequisite for an injunction.

POLLUTION

The rule of reasonable use governs case law dealing with controversies over the pollution of surface watercourses (Borough of Westville v. Whitney Home Builders, Inc., 40 N.J. Super. 62, 122 A.2d 233 (App. Div. 1956)). However, private lawsuits cannot function as pollution control devices and will not be further discussed other than stating this basic holding. Federal, State or local public enforcement hold the only potential for such control.

DIFFUSED SURFACE WATER

This water is the precipitation which uncollected is diffused over the earth's surface, not lying in a defined watercourse or becoming part of the underground supply. Whereas the earlier cases adopted the common enemy rule which granted everyone immunity no matter how he dealt with the water, New Jersey now judges the user's conduct, on a case by case basis, by the standard of reasonableness. (See Armstrong v. Francis Corp.).

II - ADMINISTRATIVE STRUCTURE

INTRODUCTION

Administrative Order No. Five took effect on December 17th, 1970. By this order the structure of the Department of Environmental Protection was extensively reorganized. The Department had been charged with the formulation of comprehensive policies for the conservation of the natural resources of the State, the promotion of environmental protection, and the prevention of pollution of the environment of the State. It was felt that the effectiveness and efficiency of the Department could be greatly increased through a reorganization which recognized administratively the interrelationships among the diverse elements of the environment, and which took account of new areas of environmental concern. The changes in organization which were made, along with those functions which did not change, are outlined in this section. For the overall structure refer to the Chart (Figure S-1 (NJ)).

DIVISION OF MARINE SERVICES

This Division replaces the old Division of Natural Resources and it now includes the Bureaus of Navigation, Marine Lands Management, and Marine Enforcement. The Bureau of Marine Lands Management and the Bureau of Marine Enforcement are newly created while the following changes from the make-up of the Division of Natural Resources should be noted.

The Bureau of Geology has been transferred to the new Division of Water Resources and the Bureau of Land Acquisition was transferred to the new Office of Legal Services and Real Estate in the Office of the Commissioner.

The Riparian Section of the Bureau of Navigation has been transferred to the Bureau of Lands and Management and is charged with the administration of riparian applications for conveyances of grants and leases and management of wetlands (see Wetlands Act of 1970).

The Marine Patrol Section of the Navigation Bureau, the Coastal Patrol of the Division of Fish, Game, and Shellfisheries, and that portion of the Bureau of Shellfish involved in enforcement activities were transferred to the Bureau of Marine Enforcement.

DIVISION OF ENVIRONMENTAL QUALITY

An Office of Pesticide Control was created and added to the Bureaus of Air Pollution Control, Radiation Protection, and Solid

Waste Management, while three bureaus were transferred out. The Bureau of Water Pollution Control was transferred to the new Division of Water Resources, and joined to this Bureau as a section was the Bureau of Shellfish Control. The Bureau of Potable Water has also been transferred to the Division of Water Resources.

DIVISION OF FISH, GAME AND SHELLFISHERIES

The Bureau of Fisheries Management has added the coordination and research and non-enforcement activities of the former Bureau of Shellfisheries, while the enforcement activities of the old Bureau have been transferred to the Bureau of Marine Enforcement.

The personnel, equipment and responsibilities of the Coastal Patrol have also been sent to the Bureau of Marine Enforcement, within the Division of Marine Services.

DIVISION OF PARKS, FORESTRY AND RECREATION

This Division takes the place of the old Division of Parks and Forestry and maintains the three Bureaus of Parks, Forestry and Recreation, along with the Natural Lands Trust, State Review Commission (H.P.P.), Historic Sites Council, Natural Areas Council, and Parks and Forestry Council.

DIVISION OF ADMINISTRATION

This Division was newly created and added to the Office of the Commissioner and has its own Division Director. The Director is responsible for administrative supervision of the Bureau of Budget, Accounting, and Procurement and the Bureau of Personnel and Payroll, both of which were transferred to the Division.

The Bureau of Legal Services has been changed to the Office of Legal Services and Real Estate, and it assumes the responsibilities of the Bureau of Land Acquisition which was formerly in the Division of Natural Resources.

This Office has centralized and administers, subject to the approval of the Office of the Attorney General, the negotiation and drafting of lease and concession agreements, and the negotiation and drafting of documents necessary in all land acquisitions within the department including lands acquired by purchase, gift, devise or exchange as well as sales of land.

The Public Information Office assumed the broad responsibilities for the direction of all the Department's public affairs activities

as directed by the Commissioner, and it reviews for clearance all press releases and other publications issued by the several divisions within the Department.

DIVISION OF WATER RESOURCES

This Division replaces the old Division of Water Policy and Supply. As trustee of the fresh water resources of the State, the Division of Water Resources is responsible for the investigation and evaluation of the surface and ground water resources of the State and the collection and compilation of data with respect thereto, for the conservation, protection, planning and equitable development and allocation of these resources.

The quasi-judicial functions of the Division relative to the allocation of water from natural surface and groundwater sources for public and private development, the approval of water supply contracts between municipally and privately-owned utilities, the exercise of the right of eminent domain for the condemnation of lands and water rights for the development of new or additional sources by public water supply systems, the allocation of water for sale from State-owned water supply facilities, and on equity questions involved in the construction of structures and encroachments on streams and the delineation of flood plain hazard areas are exercised by the Water Policy and Supply Council of the Division, which renders decisions in writing after public hearings at which the applicant and objectors must present expert testimony in support of their views. The Council is an eleven-man body of laymen appointed by the Governor with the advice and consent of the Senate. The decision of the Council and its action on any application may be reviewed by the courts.

The regulatory, planning and management activities of the Division are administered by the Director through six bureaus.

Bureau of Water Pollution Control. This bureau was transferred from the old Division of Environmental Quality with the Bureau of Shellfish Control, which now forms a part of the new bureau. The bureau is administered by the Assistant Division Director for Water Quality.

Bureau of Potable Water. The Assistant Division Director for Water Quality also directs this bureau which was transferred from the old Division of Environmental Quality.

Bureau of Geology. This bureau reports directly to the Division Director and is responsible for the issuance of well driller's licenses and permits for well drilling in addition to its previous duties.

Bureau of Planning and Management. The bureau reports directly to the Division Director and is responsible for the development of plans and policies for the orderly and equitable solution of the water and flood problems of the State, for the conduct of the long-range studies authorized by the Water Supply Bond Act of 1958 to designate reservoir sites essential for the optimum utilization of surface water resources, and for the delineation of flood plain hazard areas and the marking of recorded flood high water thereon. It conducts studies of the water needs, water resources and flood problems of the State for the guidance of local interests, and the promotion of State and Federal projects. This bureau exercises supervisory control over the cooperative program with the U. S. Geological Survey for the conduct of the State-wide investigation program authorized by the Water Supply Bond Act of 1958 to evaluate the groundwater resources of the State and provide basic geologic and hydrologic data for the protection and orderly development thereof. It is also responsible for the cooperative program with the U. S. Geological Survey for the collection of flood high water data to implement flood plain zoning and participates with the U. S. Weather Bureau and the Director of Civil Defense in the issuance of flood warnings. The Bureau represents the Division in all matters pertaining to Federal, interstate and intrastate water and flood control programs. The Department through this Division and Bureau has been designated as the coordinating agency for the Federal Flood Insurance Program.

Bureau of Water Control. This bureau reports to the Assistant Division Director for Water Supply and provides staff for administrative and engineering duties pertaining to the quasi-judicial, regulatory functions of the Water Policy and Supply Council relative to the allocation and protection of water resources and alleviation of flood damage in accordance with pertinent statutes, together with other administrative and engineering functions related thereto, such as approval and inspection of dams, geology and topography, maintenance of water-use records and computation of excess diversion tax charges. The bureau represents the Division in matters pertaining to water rights legislation.

Bureau of Water Facility Operations. This bureau was the Bureau of Water Supply. It reports to the Assistant Division Director for Water Supply, and is responsible for the maintenance, operation and business management of State-owned water supply facilities, such as the Delaware and Raritan Canal and the Spruce Run and Round Valley reservoirs, as a source of public and industrial water supply. Recreational facilities and use are administered by other units for the Department of Environmental Protection. The bureau represents the Division in matters pertaining to the Delaware River Master appointed by the U. S. Supreme Court to administer the provisions of the 1954 Decree relative to the New York City Delaware diversion case.

REGULATORY CONTROL OF WATER RESOURCES: WATER POLICY AND SUPPLY COUNCIL

The quasi-judicial procedure for the allocation of natural water resources as now exercised by the Water Policy and Supply Council was first enacted in 1907, after years of litigation between water supply interests, for the regulatory control of the diversion and use of surface water for public potable purposes. In 1910, this regulatory control was extended to the diversion and use of subsurface or groundwater for similar public potable purposes. In 1947, the regulatory control was extended to include diversions of groundwater in excess of 100,000 gallons daily for private industrial, irrigation or other similar uses in areas delineated by the Council, and in 1963 to provide similar control over diversion of surface water for private use. Thus, today, through its Council, the State has regulatory control through quasi-judicial proceedings over all large new uses of water to assure the just and equitable allocation thereof to all interests and areas for present and future anticipated needs.

The regulatory control over flood damage was first enacted in 1912 to establish State supervision over the construction and maintenance of dams to minimize the hazards of failure. In 1929, this control was extended as a quasi-judicial function of the Council to all structures located within the ordinary flood high water mark on natural streams to prevent the loss of existing channel capacity for the safe passage of flood waters of reasonable magnitude.

The flood control policy of the State is defined by three encroachment laws originally enacted in 1929, whereby:

1. The State is given power to control and curb future abuse of stream channels through the issuance of permits for new structures and the renewal of existing structures located within the ordinary flood high water mark so as not to impede the safe passage of flood waters (R.S. 58:1-26 and 27);

2. The counties are authorized to cooperate with municipalities in flood control and channel improvement projects and to assist financially as they may deem proper (R.S. 40:29-3 to 6); and

3. The municipalities are given authority to construct improvements, remove obstructions, define the locations, widths, grades, and elevations of streams, and to establish encroachment lines to define the flood channels and prevent encroachments thereon subject to the approval of the State as to the flood-carrying capacity to be provided (Chapter 229, Laws of 1938 Amending R.S. 40:46-1).

Under this allocation of authority, the State has the right to define the reasonable magnitude of the flood for which protection should be provided. The State exercises regulatory control over all

construction to "safeguard the public against damage from the waters impounded or affected" by such structures. Under the principal of Home Rule, the power to initaite and construct improvements to alleviate flooding, to initiate the removal and to remove obstructions which create flood damage, to police the abuse of streams, to define questions of private property rights involved in the relocation or maintenance of adequate flood channels, and to protect same from encroachments is placed with the municipality subject to the overall regulatory control of the State to insure reasonableness of protection, uniformity of design and equity. It is to be noted that the municipal encroachment law is not a mandatory obligation which must be assumed by the municipality.

The State has no direct control over the development of flood plains outside of the minimum channel required for the safe passage of flood waters. Authority, however, is given the municipalities by the State Municipal Zoning Enabling Law for the incorporation of flood zoning provisions in municipal zoning ordinances. In many areas of the State, effective control of encroachment lines to protect flood channels and to provide for the enlargement thereof when required has been developed by the cooperation of local municipal planning boards and building inspectors with the Division of Water Resources, whereby the local officials require that the developer or property owner obtain from the Division a permit establishing the proper encroachment line or lines prior to the issuance of a building permit or the approval of the plot development plans.

The principle involved in the establishment of encroachment lines to insure adequate waterway for the safe passage of flood waters is based on the concept that under the common law a natural stream is a public highway for the passage of flood waters which the riparian owner cannot obstruct to the detriment of others. Thus, whereas the riparian owner may own the lands over which the stream flows, there is a prior public lien on such lands as may be located below the ordinary flood high water mark. The encroachment lines merely define the portion of those lands which can be filled in and used for other purposes without unduly aggravating natural flood conditions for the ordinary or reasonable size of flood.

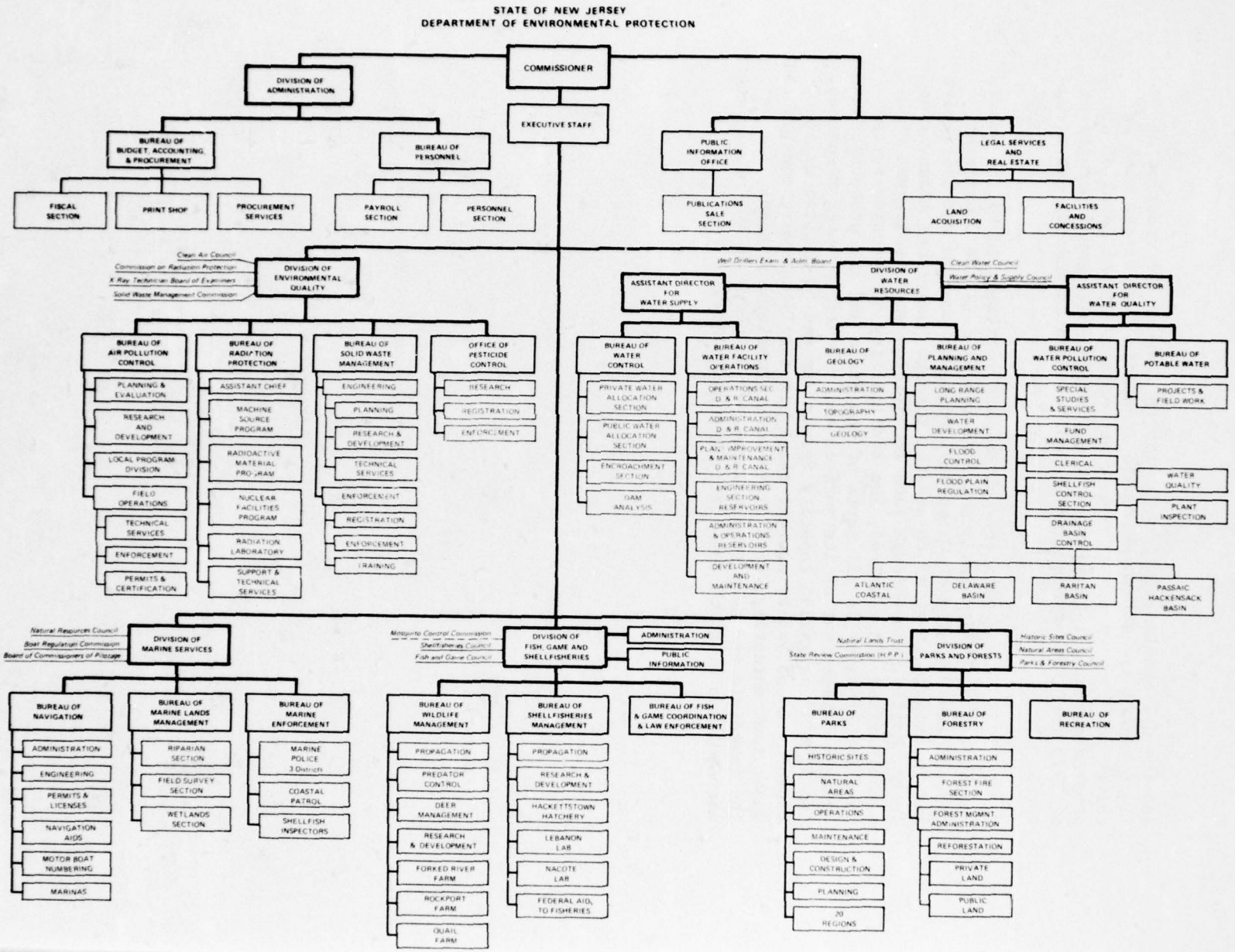
The principles involved in flood plain zoning are more complex. They involve on the one hand the right of the owner to make the maximum use of his property, and on the other, the responsibility of government to protect its citizens from the hazards and dangers resulting from the unwise use of low lands subject to frequent flooding. They also involve the restriction of the use of one property or one area for the benefit of other properties or other areas located downstream thereof.

In 1961, the regulatory control of the Council over stream channels was extended to permit the marking of flood high water on flood plains

and the delineation of flood plains to inhibit the creation of flood hazard areas through public identification of the risk involved and through the enactment at local municipal level of appropriate zoning regulations. The Division has issued permits as of 1970 for 4800 stream encroachment structures and 602 dam structures.

In 1958, the regulatory control was supplemented by the Water Supply Act of 1958 which authorizes and directs the Department, through its Division of Water Resources, to provide the initiative and foresight essential to assure, through long-range planning and investigation, and through land acquisition and development when so authorized and required, the availability of adequate future supplies of water in all parts of the State and the protection and optimum development of its surface and subsurface water resources. The 11-billion gallon capacity Spruce Run and 55-billion gallon capacity Round Valley storage reservoir facilities were constructed under that authority, with State Water Development Bonds, to meet the immediate and near future water supply needs of the northeastern metropolitan area and the lower Raritan Valley.

FIGURE S-1(NJ)


STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMISSIONER
DIVISION OF ADMINISTRATION
EXECUTIVE STAFF
BUREAU OF BUDGET, ACCOUNTING, & PROCUREMENT
BUREAU OF PERSONNEL
PUBLIC INFORMATION OFFICE
LEGAL SERVICES AND REAL ESTATE
FISCAL SECTION
PRINT SHOP
PROCUREMENT SERVICES
PAYROLL SECTION
PERSONNEL SECTION
PUBLICATIONS SALE SECTION
LAND ACQUISITION
FACILITIES AND CONCESSIONS
Clean Air Council
Commission on Radiation Protection
X-Ray Technician Board of Examiners
Solid Waste Management Commission
DIVISION OF ENVIRONMENTAL QUALITY
Well Drillers Exam. & Adm. Board
ASSISTANT DIRECTOR FOR WATER SUPPLY
DIVISION OF WATER RESOURCES
Clean Water Council
Water Policy & Supply Council
ASSISTANT DIRECTOR FOR WATER QUALITY
BUREAU OF AIR POLLUTION CONTROL
PLANNING & EVALUATION
RESEARCH AND DEVELOPMENT
LOCAL PROGRAM DIVISION
FIELD OPERATIONS
TECHNICAL SERVICES
ENFORCEMENT
PERMITS & CERTIFICATION
BUREAU OF RADIATION PROTECTION
ASSISTANT CHIEF
MACHINE SOURCE PROGRAM
RADIOACTIVE MATERIAL PROGRAM
NUCLEAR FACILITIES PROGRAM
RADIATION LABORATORY
SUPPORT & TECHNICAL SERVICES
BUREAU OF SOLID WASTE MANAGEMENT
ENGINEERING
PLANNING
RESEARCH & DEVELOPMENT
TECHNICAL SERVICES
ENFORCEMENT
REGISTRATION
ENFORCEMENT
TRAINING
OFFICE OF PESTICIDE CONTROL
RESEARCH
REGISTRATION
ENFORCEMENT
BUREAU OF WATER CONTROL
PRIVATE WATER ALLOCATION SECTION
PUBLIC WATER ALLOCATION SECTION
ENCROACHMENT SECTION
O&M ANALYSIS
BUREAU OF WATER FACILITY OPERATIONS
OPERATIONS SEC. D. & R. CANAL
ADMINISTRATION D. & R. CANAL
PLAN. IMPROVEMENT & MAINTENANCE D. & R. CANAL
ENGINEERING SECTION RESERVOIRS
ADMINISTRATION & OPERATIONS RESERVOIRS
DEVELOPMENT AND MAINTENANCE
BUREAU OF GEOLOGY
ADMINISTRATION
TOPOGRAPHY
GEOLOGY
BUREAU OF PLANNING AND MANAGEMENT
LONG RANGE PLANNING
WATER DEVELOPMENT
FLOOD CONTROL
FLOOD PLAIN REGULATION
BUREAU OF WATER POLLUTION CONTROL
SPECIAL STUDIES & SERVICES
FUND MANAGEMENT
CLERICAL
SHELLFISH CONTROL SECTION
DRAINAGE BASIN CONTROL
BUREAU OF POTABLE WATER
PROJECTS & FIELD WORK
WATER QUALITY
PLANT INSPECTION
ATLANTIC COASTAL
DELAWARE BASIN
RARITAN BASIN
PASSAIC HACKENSACK BASIN
Natural Resources Council
Boat Regulation Commission
Board of Commissioners of Pilotage
DIVISION OF MARINE SERVICES
Mosquito Control Commission
Shellfisheries Council
Fish and Game Council
DIVISION OF FISH, GAME AND SHELLFISHERIES
ADMINISTRATION
PUBLIC INFORMATION
Natural Lands Trust
State Review Commission (H.P.P.)
DIVISION OF PARKS AND FORESTS
Historic Sites Council
Natural Areas Council
Parks & Forestry Council
BUREAU OF NAVIGATION
ADMINISTRATION
ENGINEERING
PERMITS & LICENSES
NAVIGATION AIDS
MOTOR BOAT NUMBERING
MARINAS
BUREAU OF MARINE LANDS MANAGEMENT
RIPARIAN SECTION
FIELD SURVEY SECTION
WETLANDS SECTION
BUREAU OF MARINE ENFORCEMENT
MARINE POLICE 3 Districts
COASTAL PATROL
SHELLFISH INSPECTORS
BUREAU OF WILDLIFE MANAGEMENT
PROPAGATION
PREDATOR CONTROL
DEER MANAGEMENT
RESEARCH & DEVELOPMENT
FORKED RIVER FARM
ROCKPORT FARM
QUAIL FARM
BUREAU OF SHELLFISHERIES MANAGEMENT
PROPAGATION
RESEARCH & DEVELOPMENT
HACKETTSTOWN HATCHERY
LEBANON LAB
NACOTE LAB
FEDERAL AID, TO FISHERIES
BUREAU OF FISH & GAME COORDINATION & LAW ENFORCEMENT
BUREAU OF PARKS
HISTORIC SITES
NATURAL AREAS
OPERATIONS
MAINTENANCE
DESIGN & CONSTRUCTION
PLANNING
20 REGIONS
BUREAU OF FORESTRY
ADMINISTRATION
FOREST FIRE SECTION
FOREST MGMNT. ADMINISTRATION
REFORESTATION
PRIVATE LAND
PUBLIC LAND
BUREAU OF RECREATION

COMMONWEALTH OF PENNSYLVANIA

Prepared by

Commonwealth of Pennsylvania
Department of Environmental Resources
Harrisburg, Pennsylvania

March 1971
Revised November 1971

COMMONWEALTH OF PENNSYLVANIA
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COMMONWEALTH OF PENNSYLVANIA

INTRODUCTION

The administration and execution of the regulations and programs for water and associated resources in Pennsylvania involve a number of different types of agencies. Various administrative functions are handled by boards and commissions, some of which are independent (e.g., Game Commission) while others are concerned with a specific aspect of a departmental jurisdiction (e.g., the State Soil and Water Conservation Commission in the Department of Environmental Resources). There are also advisory boards and commissions having responsibilities at both the independent and departmental level e.g., the State Planning Board which advises the Governor's Office, and the Citizens Advisory Council within the Department of Environmental Resources. The operational executive departments handle the details of State-level programs through their specialized bureaus.

These various types of boards, commissions and departments are not, as their modifying adjectives imply, functionally exclusive. Each agency has varying degress of assigned responsibilities in all three types of functions. For instance, the Fish Commission, an independent administrative agency for the conservation of fish species, also provides advisory services to other agencies and enforces recreational boating regulations. A list of the water-related boards and commissions that are predominately administrative or advisory is outlined below to clarify agency relationships:

Administrative Commissions:

Pennsylvania Fish Commission

Pennsylvania Game Commission

Public Utility Commission

Historical and Museaum Commission

Departmental Administrative Boards, Commissions, and Offices:

Department of Environmental Resources

Environmental Quality Board

Environmental Hearing Board

State Board for Certification of Sewage

Treatment and Waterworks Operators

State Soil and Water Conservation Commission

Anthracite Mine Inspectors

Bituminous Mine Inspectors

Department of Transportation:

Navigation Commission for the Delaware River and its navigable tributaries

Advisory Boards:

State Planning Board

Advisory Board for Boating

State Transportation Commission

Departmental Advisory Groups:

Department of Environmental Resources:

Citizens Advisory Council

Department of Health:

Advisory Health Board

Department of Transportation:

State Transportation Advisory Committee

The executive departments are units of the Governor's Cabinet having assigned responsibilities for executing the required management functions. The departments listed below are involved in or affected by the different aspects of water and related resources:

Department of Agriculture

Department of Commerce

Department of Community Affairs

Department of Environmental Resources

Department of Transportation

The functions, powers, duties and organization of all Commonwealth agencies are given in detail in Pennsylvania's Administrative Code (Act of April 9, 1929: P. L. 177, as amended). Those agencies mentioned above are, of course, only part of the total organization. In the sections that follow, these agencies are briefly described relative to their pertinency to the regulation and development of water and associated resources in terms of their respective powers and duties.

CONSTITUTIONAL POWERS

Pennsylvania's current (and fifth) Constitution became effective on January 1, 1968. It makes no stipulations for the administration and management of natural resources but invests supreme executive power in the Governor for the execution of all laws. The General Assembly has the power to prescribe to other executive appointments of agency heads in the Executive Department of State Government.

The Constitution empowers the General Assembly to "establish standards and qualifications for private forests reserves, and make special provision for the taxation thereof..." (Section 2 (b)(i) of Article VIII: Taxation and Finance). Section - of the same article defines and limits the Commonwealth indebtedness. Debt may be without limit if its purpose is itemized in the law and if such indebtedness is approved by a referendum if such debt "...will not cause the amount of all net debt outstanding to exceed one and three-quarters times the average of the annual tax revenues... in the previous five fiscal years...". Also capital project debts "... shall mature within a period not to exceed the estimated useful life of the project as stated in the authorizing law, and when so stated shall be conclusive."

In addition to the public debt stipulations above, the Constitution authorizes the Commonwealth to create debt and to issue bonds for the amounts and purpose listed below for the enhancement of environmental qualities in the State:

Project 70: $70,000.000 "...for the acquisition of land for State parks, reservoirs and other conservation and recreational and historical preservation purposes, and for participation by the Commonwealth with political subdivisions (for the purposes)..."

Project 500 (Land and Water Conservation and Reclamation Fund): $500,000,000"...for the conservation and reclamation of land and water resources of the Commonwealth, incldung the elimination of acid mine drainage, sewage and other pollution from the streams..., the provision of State financial assistance to political subdivisions and municipal authorities... for the construction of sewage treatment plants, the restoration of

abandoned strip-mined areas, the control of extinguishment of surface and underground mine fires, the alleviation and prevention of (mining) subsidence..., and the acquisition of additional lands and the reclamation and development of park and recreational lands..."

A recent amendment to the Constitution (May, 1971) guarantees the rights to "clean air and pure water" to the citizens of Pennsylvania.

WATER RIGHTS AND POLICIES

The basis of water rights in Pennsylvania is the riparian doctrine of reasonable usage. The principal feature of this is that private rights in water arise from, and only from, ownership of land which adjoins a natural body of water, and that all such owners have equal rights to co-share in the use of the waters, so long as each riparian is "reasonable" in his use. Riparian rights are further considered "usufructuary" in nature. That is they are rights of use, not ownership, of flowing water. These rights, of course, are qualified by regulating statutes and "common law". The latterare court-made rules governing water resources which have evolved on a case-by-case basis. These rules are prototypical, that is, they represent the common law rules followed by Commonwealth courts in the absence of statutory modification.

Among the earliest modifications of water rights were the restrictions in connection with the navigability or commercial use of certain streams. During the colonial period of Pennsylvania the streams were the principal means of commercial transportation. In 1771, the colonial government of Pennsylvania declared the Delaware River and its principal tributaries to be "public highways". The Commonwealth's General Assembly continued this practice during the canal era in the State (to about 1870), and sometimes used purposes other than commercial reasons for "navigability." For instance, Conestoga Creek, a tributary of the Susquehanna River, was so designated "... from (its) mouth up to the intersection of Muddy Creek, for the protection of fish."

WATER ADMINISTRATIVE POLICY

Pennsylvania's formal organization for administering its water resources development and regulation has been, until recently, a decentralized pattern of several State agencies. These agencies were assigned different administrative and technical aspects of water resources as problems arose. However, the recent revision to the Administration Code (January, 1971) was a major step toward centralizing water management functions. This legislation combined the powers, organization, and responsibilities of agencies and bureaus concerned with natural resources into a Department of

Environmental Resources. The powers and duties of this agency are listed in subsequent sections.

An informal body, composed of management-level personnel from those State agencies affected by or having water resources functions in development or regulation, was formed in 1966 as an aid in coordinating activities and decisions affecting water resources programs. This body, known as the Pennsylvania Water Resources Coordinating Committee, continues to function. The Committee has broadly stated its role as follows:

> Water is vital to every segment of our society in every section of the Commonwealth. While Pennsylvania is richly endowed with natural water resources, there is an increasing demand for water by our growing population and a burgeoning industry. In addition to growing needs, we face natural hazards, such as floods and droughts, as well as man-made problems of pollution and wasteful exploitation of water.
>
> As a result of the growing needs for water, and in recognition of natural and man-made fluctuations of water quality and quantity, many State agencies are responsible for various water related functions.
>
> The Pennsylvania Water Resources Coordinating Committee aims to permit close coordination and cooperation among all State agencies whose responsibilities or functions are concerned in any way with the surface or subsurface waters of the Commonwealth. It is intended that this will lead to efficient and effective planning, development and management of Commonwealth's water resources.

The Committee's major function is as a forum for the consideration of common problems in connection with usage programs. Many of the problems considered are outside the realm of the official responsibilities of member agencies, i.e., problems not covered by legislation, or conflicts of programs' purposes within a drainage basin.

The Committee also serves as a communications center for the exchange of information and policy viewpoints regarding current and proposed programs. Also, the Committee sponsors informational programs pertaining to water resources development and regulation. These include seminars to train agency personnel, organizational meetings for interested citizens to form watershed associations, and reports of current water resources research activities at monthly Committee meetings.

I - STATE AGENCIES

ADMINISTRATIVE AGENCIES; INDEPENDENT COMMISSIONS

Pennsylvania Fish Commission. This agency is governed by nine commissioners appointed by the Governor with the approval of the Senate. Eight of the commissioners are selected from geographic regions, must be well informed on the subject of conservation and restoration; one commissioner at large is appointed to represent boating interests. The members hold office for eight years and/or until their successors are appointed. Each Commissioner represents a geographic region, a group of 8 or 9 counties, of which there are eight in Pennsylvania. The commissioners receive no monetary compensation for their services.

The Commission shall appoint, to serve at its pleasure, an Executive Director, and, with the approval of the Governor, fix the salary he will receive for attending to the administrative work of the commission.

The Executive Director shall be Chief Fish Warden and shall have charge of, direct, supervise and control all other fish wardens and employees of the Commission.

The Commission has the responsibility to make, administer, and enforce rules and regulations relating to:

Recreational boating;

Protection, propagation and distribution of fish, and for the angling, catching or removal of fish in or from any waters within the Commonwealth;

Appointment of staff personnel and fish wardens; and

Control of management of all hatching stations and fish cultural establishments, including land and water acquisitions.

The Commission obtains, and transmits for publication, information respecting the laws relating to fish protection, and the extent and conditions of the Commonwealth fisheries,

It must require any person, association, or corporation, erecting or maintaining a dam in the waters of the Commonwealth, to erect therein such chutes, slopes, fishways, gates, or other devices deemed necessary to enable the fish to ascend or descend the waters at all seasons of the year;

The Commission issues boat and net licenses, seine licenses,

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propagation licenses, fishing licenses, and any other licenses needed for protection and propagation of fish.

Pennsylvania Game Commission. This body consists of 8 members who are competent and well informed on the subject of wildlife management and restoration. Each member is selected from a geographical area comprising 6 to 11 counties, and is appointed by the Governor, with Senate confirmation, for a term of 8 years and/or until their successors are appointed. The Commission selects an Executive Director, as the Governor shall approve, to attend to the administrative work of the Commission.

The Executive Director of the Commission shall be the Chief Game Protector, and shall have the direction, supervision, and control of the other game protectors.

The responsibilities of the Commission are:

To protect, propagate, manage, and preserve the game, furbearing animals and protected birds of the State;

To enforce the laws of the Commonwealth related to the above;

To appoint and train game protectors and employees;

To acquire land by gift or purchase;

To lease privately owned land for public hunting and wildlife management;

To establish regulations relating to State Game Lands;

To establish game bag limits;

To publish the Game News, bulletins, and literature necessary to the work of the Commission; and

To issue hunting licenses, special deer licenses, special licenses to persons of known scientific attainment, agents of public museums, teachers of ornithology, breeders, taxidermists, and fur dealers and other licenses for protection and propagation of wildlife.

Public Utility Commission. The five members of this Commission are appointed by the Governor, and confirmed by the Senate, for staggered terms of 10 years each.

A member designated by the Governor shall be the Chairman of the Commission during such member's term of office.

The Public Utility Commission has the primary duty to regulate the intrastate rates and service of public utilities operating in Pennsylvania. Its chief objective is to establish and maintain reasonable rates and adequate service. A public utility is defined as any company, corporation or person engaged in furnishing services to the public for compensation. The water-related services subject to Commission regulation are water supply, electric, steam, water sewerage collection and disposal, and wharf. The Commission's principal functions are:

Regulation of rates charged by utilities;

Regulation of utility service and facilities to the end that both are adequate, efficient, safe and reasonable for the public,

Processing service requests and the settlement of disputes involving meter readings.

Historical and Museum Commission. The membership of this body is the Secretary of Education (ex officio), nine Pennsylvania residents appointed by the Governor, two members of the Senate appointed by the President Pro Tempore, and two members of the House appointed by the Speaker.

The Chairman is designated by the Governor.

The Commission is designated to act as the official agency of the Commonwealth for the preservation of Pennsylvania's historic heritage and the preservation of public records, historical documents and objects of historical interest. In this capacity, its powers and duties are in five principal categories: museums, historic properties and markers, archeological research and publications, historical research and publications, and care of public records.

The Commission has these further duties:

To resolve all unsettled questions concerning geographic names which arise in the administrative departments;

To determine, change and fix the names of mountains, rivers, creeks and other topographic features within Pennsylvania. In this capacity, the Commission must cooperate with the U. S. Geographic Board; and

To provide administrative direction of the Washington Crossing Park Commission and the Valley Forge Park Commission.

DEPARTMENTAL ADMINISTRATIVE BOARDS AND COMMISSIONS

Department of Environmental Resources.

(1) Environmental Quality Board. This board is composed of the Secretaries of Environmental Resources (Chairman), Agriculture, Commerce, Community Affairs, Health, Labor and Industry, and Transportation; the Executive Directors of the Fish Commission, Game Commission, Historical and Museum Commission, and the State Planning Board; the Chairman of the Public Utilities Commission, five members of the Citizens Advisory Council, designated by the Council; and four members of the General Assembly, one each appointed by the President Pro Tempore of the Senate, the Minority Leader of the Senate, the Speaker of the House of Representatives, and the Minority Leader of the House of Representatives. Eight members of the Board constitutes a quorum.

The power and duties of the Board are:

To develop a master environmental plan for the Commonwealth;

To formulate, adopt and promulgate the rules and regulations for the proper performance of the work of the Department;

To subpoena witnesses, records and papers;

To receive and review reports from the Department, and to advise the Department on matters of policy; and

To establish rules and regulations for the control, management, protection, utilization, development, occupancy and use of the lands and resources of State parks and State forests.

(2) Environmental Hearing Board. This body consists of three persons appointed by the Governor and learned in the law, of whom the Governor shall designate one as Chairman.

A Secretary is appointed by the Secretary of Environmental Resources with the approval of the Governor.

The responsibilities of the Board include:

To hold hearings and issue adjudications on any order, permit, license or decision of the Department;

To employ, with the concurrence of the Secretary of Environmental Resources, hearing examiners and other personnel necessary to the exercise of its functions; and

To subpoena witnesses, records and papers.

(3) State Soil and Water Conservation Commission. Membership in this group includes the Secretaries of Environmental Resources (Chairman) and Agriculture; the Dean of the College of Agriculture of Pennsylvania State University; and four farm members and two urban, non-farm members appointed by the Governor. In addition, there are two associate, nonvoting members: the State Conservationist of the Soil Conservation Service, U. S. Department of Agriculture, and the Director of the Agriculture and Home Economics Extension of Pennsylvania State University.

In fulfillment of its responsibilities, the Commission must:

Approve the establishment and organization of county soil and water conservation districts, and district conservation plans for erosion control;

Apportion any funds alloted from State or Federal sources;

Assume responsibility for expenditures by county districts;

Cooperate with government agencies in activities related to conservation of soil and water resources, including the control and prevention of soil erosion, maintenance of projects of safeguard and conserve local water supplies, assistance on a community basis in drainage projects, conservation of wildlife, and forest management; and

Approve applications for assistance under the Federal Public Law 566.

(4) State Board for Certification of Sewage Treatment and Waterworks Operations. This agency is composed of the Secretary of Environmental Resources, and five members appointed by the Governor, as follows:

An employee of a municipality or authority that operates a sewage treatment plant, water treatment plant or water distribution system, or a representative of a State association of municipality authorities;

An individual qualified to operate any water treatment plant;

An owner or official of a privately owned waterworks;

An individual qualified to operate any sewage treatment plant; and

A member on the teaching staff of the civil or sanitary engineering department of an accredited Pannsylvania university or college. The board members serve without compensation except for

expenses. A chairman and secretary are elected annually, and meetings are called by the chairman as needed.

The Board has the responsibility to:

Review and pass upon applications for certification of sewage treatment plant and waterworks operators;

Prepare and hold such examinations as may be deemed necessary to determine the fitness or candidates for certification;

Revoke, suspend or reinstate certificates;

Receive and act upon complaints;

Compel attendance of witnesses and the production of books or records; and

Formulate, adopt, promulgate and repeal such rules and regulations as are deemed necessary to implement the provisions of Act 322, November 18, 1968 as amended.

Department of Transportation.

Navigation Commission for the Delaware River. The members of this Commission are the Secretary of Environmental Resources (ex officio); the Director of Wharves, Docks and Ferries of Philadelphia, (ex officio); three members appointed by the Governor (two residents of Delaware County and one resident of Bucks County); and two members appointed by the Mayor of Philadelphia.

The powers and duties of the Commission are:

To keep accurate minutes and entries of all orders, regulations and transactions of the Commission, and to make such records available for inspection upon request;

To hire a civil engineer and other necessary employees, with the approval of Secretary of Environmental Resources; and

To maintain adequate offices and a meeting room.

ADVISORY AGENCIES: BOARDS AND COMMISSIONS

State Planning Board. This agency is composed of fifteen members appointed by the Governor from the general public, and four members from the General Assembly as follows: two members from the House of Representatives (one from each party), appointed by the Speaker, and two members from the Senate (one from each party), appointed by the President Pro Tempore. The Secretaries of Agriculture, Commerce,

Community Affairs, Environmental Resources and Transportation are ex officio members.

It is the responsibility of the Board to:

Conduct and stimulate research, and to collect, compile and analyze data concerned with industrial, commercial, social, and physical factors that could influence the present and future welfare of Pennsylvania;

Prepare plans for physical and economic development for the State;

Advise State departments and local authorities on planning;

Prepare a long-term development program for major State improvement projects; and

Publish information relating to the proper economic and physical development of Pennsylvania and its natural resources, and make recommendations to the Governor in these fields.

State Transportation Commission. The Secretary of Transportation, ex officio, is Chairman, and the Chairman of the Senate Committee of Highways and Chairman of the House of Representatives Committee on Transportation are ex officio members. In addition, eight members are appointed by the Governor, with the approval of the Senate, from the public at large, of which two must be members of a board of directors of a transportation authority, and two others who are residents of Philadelphia and Allegheny Counties, respectively. Two members are from the General Assembly, one each from each House who are minority party members, appointed by the President Pro Tempore of the Senate and the Speaker of the House of Representatives, respectively.

The Commission has the following responsibilities:

To hold public hearings throughout the Commonwealth to secure pertinent information relative to any transportation route or program, and alternatives;

Gather and study all available information, data, statistics and reports relating to the needs for highways, rapid transit, railroad, bus, marine and other mass and bulk transportation facilities and services, including aviation and airport facilities and services;

Determine, on the basis of available information, data, statistics and reports which of the above facilities and services should be constructed, and the recommended order of priority of such construction; and

Certify from time-to-time the results of such determination to the Governor, to the General Assembly and to the Secretary of Transportation for their consideration.

Advisory Board for Boating. This board is composed of the Secretary of Environmental Resources, the Assistant Executive Director of the Fish Commission in charge of the Watercraft Safety Division, and five members, appointed by the Governor, who are experienced boatmen.

It acts in an advisory capacity to the Fish Commission, and meets at such times as specified upon call of the Chairman, or three members of the Fish Commission.

DEPARTMENTAL ADVISORY GROUPS

Department of Environmental Resources.

Citizens Advisory Council. Members of this body include the Secretary of Environmental Resources, and eighteen others, appointed as noted below, who are knowledgeable in fields related to the work of the Department of Environmental Resources, and who are citizens of the State holding no other salaried State office except that of membership on the Environmental Quality Board. Appointments are made as follows, where in each case no more than three can be of the same political party: six members by the Governor, six members by the Speaker of the House of Representatives, and six members by the President Pro Tempore of the Senate. The chairman is elected annually, and meetings of the Council are held at least quarterly or at the call of the chairman.

In its advisory capacity, the Council may employ and fix the compensation of such experts, stenographers and assistant as necessary to carry out its work. The Council, however, is expected to enlist such voluntary assistance as may be available from citizens, research organizations and other generally qualified sources.

The Council has the responsibility of reviewing all environmental laws of the Commonwealth of Pennsylvania and making suggestions for the revision, modification and codification, reviewing the work of the Department, advising the Department, and making reports to the Governor and the General Assembly.

Department of Health.

Advisory Health Board. This board is chaired by the Secretary of Health, and is composed of appointees by the Governor, which must include five doctors of medicine, one dentist, one pharmacist, and one professional sanitary engineer.

The powers and duties of the Board are;

To advise the Secretary of Health;

To make rules and regulations deemed necessary for the prevention of disease and for the protection of lives and health, and for the proper performance of the work of the Department of Health, such rules and regulations to become the rules and regulations of the Department;

To adopt rules and regulations for personnel administration based upon merit and fitness; and

To prescribe minimum health activities and minimum standards of performance of health services for counties or other political subdivision.

Department of Transportation.

State Transportation Advisory Committee. The membership of this body consists of the Secretaries of Transportation, Agriculture, Commerce, Community Affairs, Education, and Environmental Resources, the Chairman of the Public Utility Commission; the Executive Director of the State Planning Board; two members of different political parties from the House of Representatives appointed by the Speaker; two members of different political parties from the Senate appointed by the President Pro Tempore; and eighteen public members, of which six each are appointed by the Governor, Speaker of the House, and the President Pro Tempore of the Senate, and from which the Governor annually designates the Chairman of the Committee.

The responsibilities of the Committee are:

To consult with and advise the State Transportation Commission and the Secretary of Transportation in behalf of all the Transportation modes of the Commonwealth; and

To aid and assist the State Transportation Commission and the Secretary of Transportation in the determination of goals and the allocation of available resources among and between the alternative modes in the planning, development and maintenance of programs and goals of the Department and the State Transportation Commission.

EXECUTIVE DEPARTMENTS

Department of Agriculture. The Pennsylvania Department of Agriculture is essentially a service agency dealing with investigational, marketing and service problems in the Commonwealth which can best be solved through public rather than individual action. The Department is charged by numerous laws to encourage the

development and successful pursuit of agriculture, to control animal and plant diseases and insect pests, and to safeguard the public against impure or misrepresented foods, as well as feeds, fertilizers, liming materials and pesticides. The Department also gives special attention to questions relating to the valuation and taxation of farm lands, to the variation and diversification in the kinds of crops, their methods of cultivation and their adaptability to changing markets, and to ways and rates of transportation.

The Department's principal associations in the area of water resources involve both the regulation and the development aspects. In the first, the Department's responsibilities relating to pesticides are directly related to water pollution problems. In the second, the Departments responsibilities for improving crops and markets have an indirect relationship to adequate water supply. Here the connection is with irrigation needs during periods of drought and for enhancement of crop values.

Department of Commerce. Acts No. 50 and 51 created the Department of Commerce and charged it with the duty of "promotion and development of business, industry and commerce in the Commonwealth." Section 3 of Act No. 51, known as the "Commerce Law," declares that the Department of Commerce shall have the power, and its duty shall be: (1) To investigate, study and undertake ways and means of promoting and encouraging the prosperous development and protecting the legitimate interests and welfare of Pennsylvania business, industry and commerce, within and without the Commonwealth....(and) (6) To make to the General Assembly, from time to time, recommendations for the remedy or improvement of any conditions, and the elimination of any restrictions and burdens imposed by law, or otherwide existing, which adversely affect or retard the development and expansion of business, industry or commerce...."

The Department is vitally concerned with the adequancy of the quality and quantity of our water supply. Prudent water management is essential to further industrial development. The Department advocates water quality standards which are commensurate with feasible treatments will tend to force plants to shut down and discourage industrial migration. Industry is becoming more conservation-conscious and increasingly is planning its development to have a minimal adverse effect on our natural resources.

The Department of Commerce is intrinsically interested in the programs of all water-related agencies. The Department realizes that it may be necessary, to insure the greatest good for the greatest number, at some time and in some instances to make choices between industrial, recreational, andother pressing demands for water uses on particular stretches of streams.

The Department advocates a realistic water resources policy that recognizes that the Commonwealth's rules and regulations should be commensurate with those of other states, and should not put Pennsylvania at a competitive disadvantage with other states.

Additionally, the Department is interested in the fullest development of the outdoor recreation potential of Pennsylvania and in the judicious conservation and uses of the Commonwealth's natural resources for all segments of the economy.

The Department is also involved in many programs as follows:

The Secretary of Commerce is a member of the Environmental Quality Board in the Department of Environmental Resources (Act 275 - 1970);

The Bureau of Industrial Development advises industrial prospects regarding potential sites based on water resources information for those industries requiring this type of data. Its Statistics Division conducts census of water utilities (private, municipal, and municipal authorities) requiring annual statistical reports relating to customers, quantity, investments, revenues, and expenses;

The Bureau of Travel Development encourages, promotes, and assists recreation, travel, and tourism, to and throughout the Commonwealth, much of which is water-related;

The Bureau of State and Federal Economic Aid administers a number of grant-in-aid programs, three of which are concerned with water resources. These are: The Appalachia Program, the Community Facilities Program, and the Site Development Program.

(1) The Appalachia Program - Under Section 214 of the Appalachia Regional Development Act of 1965, as amended, grant funds are provided to supplement basic Federal grants (PL 660 or HUD) for improvements to sewage treatment facilities or water supply systems.

The Appalachia office (in the Bureau of State and Federal Economic Aid), in conjunction with the State Planning Board has coordinated the interests of State Departments and agencies concerned with water resources, in developing participation in a comprehensive water development plan which the Corps of Engineers has completed under the Appalachia Program for the 13 Appalachia states.

(2) The Community Facilities Program - Grants are made by the Department of Commerce, from funds secured from a 2% set aside of daily wagers at two harness racing tracks, to assist in the

"construction, rehabilitation, alteration, expansion, or improvement of water facilities, sewage disposal facilities..." Eligible applicants are boroughs, townships, or municipal authorities.

(3) The Site Development Program - Grants are made by the Department of Commerce from appropriations made by the General Assembly, to assist in the "construction, rehabilitation, alteration, expansion, or improvement of ... water facilities...sewage collection lines...and channel realignment..." needed for new or existing industrial development projects. Eligible applicants are municipalities, municipal authorities, industrial development agencies, or State agencies.

Department of Community Affairs. The broad objective of the Department of Community Affairs, which was created in 1966, is to enhance community development. To this end, it seeks to support and assist local governmental capacity to deal with community problems and to focus State resources thereon through interdepartmental action. The Department is a community-oriented, problem-solving agency that endeavors to coalesce local, State, and Federal energies on a priority basis to meet neighborhood, municipal and area needs. The operational mechanisms of the Department for integrating and applying both technical and financial resources to meeting community needs is through an urban-oriented delivery system, i.e., Model City/Partner City, through its regional offices and through consulting services made available to all municipalities.

In the area of water resources management and development, the Department has two areas of interest. First, the Department, through its Bureau of Planning, is responsible for coordinating the Federal Flood Insurance Control Program, and for providing assistance to municipalities in program requirements and flood plain regulatory measures. It prepares and disseminates information on the Flood Insurance Program to planning and development agencies and for local officials, including preparation and dissemination of flood plain regulatory measures. Second, the Departmment, through its Bureau of Community Programs, administers the State's "Project 500" programs for the preservation of open space and recreational facility development.

Department of Environmental Resources. At this writing (January, 1971), the Department of Environmental Resources is the most recent revision in the administrative structure of Pennsylvania's State government. The Department became effective on January 19, 1971, as the central agency responsible for the regulation and development of the Commonwealth's natural resources. The new Department combines the functions, powers and responsibilities of several former administrative boards and commissions, executive departments and bureaus of other departments under a single

administration. These functions, which are outlined below are concerned with the management of the activities affecting water and land resources, minerals and outdoor recreation, and with the control and abatement of water and air pollution. The Department is, therefore, the foremost State agency involved in water and related land resources.

(1) Forests powers and duties. These are as follows:

To acquire, by purchase, gift, lease or condemnation, and hold as State forests any lands (including tax delinquent lands), which in the Department's opinion should be held for the management, control, protection, maintenance, utilization and regulation as State forests or for reforestation; also to add to existing State forest lands for the purpose of lessening soil erosion and the siltation of reservoirs, control of stream flows, or establishment and maintenance of fire observation towers and stations;

To purchase and hold unseated, vacant, or unappropriated lands, lands advertised for sale of taxes, and land sold for taxes as State forests;

To divide the State into such convenient forests districts as it deems economical and effective for the administration, protection, development, utilization and regulation for the occupancy and use of the lands and resources of the State forest;

To protect all forest land in the State from forest fires, fungi, insects and other enemies;

To promote and develop forestry and knowledge of forestry throughout the State, including assistance in Arbor Day work or any other activity in local forestry deemed helpful to the public interest;

To advise and assist landowners in the planting of forest and shade trees, and to distribute young forest trees, shrubs and vines to those desiring to plant them;

To cooperate with the authorities of townships, boroughs and cities in the Commonwealth in the acquisition and administration of municipal forests;

To dispose of State forest timber on terms most advantageous to the State whenever the welfare of the Commonwealth and the betterment of the State forests will be advanced, provided that the Department sets aside within the State forests unusual or historical groves of trees or natural features especially worthy of permanent perservation, makes the same accessible and convenient for public use, and dedicates them in prepetuity to the people of the State for their

recreation and enjoyment;

To make and execute contracts or leases for the mining or removal of any valuable minerals that may be in State forests, or of oil and gas beneath those waters of Lake Erie owned by the Commonwealth, whenever the Department deems that such disposition of the minerals would be for the best interests of the State;

To appoint a chief forest fire warden, district forest wardens and such other local forest wardens and other assistants as required for the prevention, control and extinction of forests fires·

To establish and administer auxiliary forest reserves;

To furnish information and issue certificates and requisitions necessary for the payment of such fixed charges, in lieu of taxes on State forest and auxiliary forest reserves, to school districts, road districts and counties;

To sell or exchange, if approved by the Governor, State forest land whenever it is to the advantage of the State forest interests;

To set aside any State-owned land for the exclusive use for parks, parkways and other places of scientific, scenic, historic or wildlife interest whenever the Department deems such action is necessary;

To maintain and operate the Pennsylvania State Forest School at Mount Alto to provide professional education in forestry and maintain a close association of theory and practice, and to train forest rangers and forest inspectors;

To lease for industrial or economic development purposes or for nuclear reactor safety zone purposes, those lands acquired by gift from Pennsylvania State University or by acquisition from the Curtiss-Wright Corporation located at Quehanna, Pennsylvania, including certain industrial buildings on the land, such lease to be approved by the Governor and in cooperation with the Department of Commerce;

To lease portions of State forests, for periods not exceeding 10 years, to citizens, church organizations or school boards for health and recreational purposes, and, in small areas of State forests suitable for crops, to intersted persons;

To grant rights-of-way through State forests to individuals or corporations when such grant will not adversly effect the land, and when the interests of the Commonwealth or its citizens will be promoted by such grant;

To give boroughs and other municipalities, subject to the Department's restrictions and regulations, the privilege of impounding water upon any State forests, and construction, maintaining and operating lines of pipe upon and through State forests for the conveyance of water therefrom;

To expend reasonable sums for the maintenance, repair or extension of established public roads running into, through or bordering State forests for proper administration and protection of State forests;

To enter into cooperative agreements with county, township, municipal and private agencies for the prevention and suppression of forest fires;

To grant to public utility companies the privilege to construct, maintain and operate their lines over, along and upon highways and roads which lie within or border on any State forests, and to grant right of access by such companies to or through State forest lands, in order to bring public utilities to camps and cottages in State forest lands and in other homes and farms adjacent to State forests lands;

To grant the privilege to erect, maintain and operate towers, stations, cables and other devices and apparatus helpful or necessary for broadcasting, telecasting, transmission, relaying or reception of television to certain parties; and

To lease State forest lands for the underground storage of natural gas, subject to the approval of the Governor and upon such terms and conditions as the Secretary of Environmental Resources deems to be in the best interest of the Commonwealth.

(2) Parks powers and duties. These are:

To supervise, maintain, improve, regulate, police and preserve all parks belonging to the Commonwealth;

To acquire by purchase, gift, lease or condemnation any lands which, in the judgement of the Department, should be held, controlled, protected, maintained and utilized as State park lands for the purpose of promoting healthful outdoor recreation and education, and making available for such use natural areas of unusual scenic beauty, especially such as provide impressive views, water falls, gorges, creeks, caves, or other unique and interesting features;

To establish such rules and regulations, compatible with the purposes for which State parks are created, for the control, management, protection, utilization, development, occupancy and use of the lands and resources of State parks; and

To see that conveniences and facilities for the transportation, shelter, comfort and education of people shall be so designed and constructed as to retain the naturalistic appearance of State parks areas, surroundings and approaches.

(3) Waters powers and duties. These include the following:

To study, consider, and determine a public policy with regard to the conservation, marketing and equitable distribution of the water and power to be derived from the utilization of the water resources of the Commonwealth, to the restoration, development and improvement of transportation by water, to the supply of water and power for municipal, domestic and industrial use, and to conservation of water resources by the aid of forestation;

To investigate or examine dams, walls, wing walls, wharves, embankments, abutments, projections, bridges and other water obstructions, determine whether they are unsafe, need repair, alteration or change in the structure or location, or should be removed; notify owners to repair, alter or change the structure or location or remove the same, repair, alter or change the structure or location or remove it in emergencies without notice and at the cost of the owner, and apply for injunctions to enforce compliance with or restrain the violation of the law in regard to the safety of dams, or the derogatory effect of walls, wing walls, wharves, embankments, abutements, projections, bridges or other water obstructions in the regimen of streams, or the violation of any lawful order or notice of the Department in regard thereto. The power of the Department shall extend to and include all types of water obstructions, regardless of the date when such obstructions were constructed, and whether or not the same were constructed by express or implied permission of the Commonwealth, or any agency thereof;

To collect such information relative to the existing conditions of the water resources of the State as, in the opinion of the Department, shall be necessary for the utilization of waters, and for the conservation, purification, development and equitable distribution of water and water power resources, and in particular, for the use of such citizens and communities as may be in need of extended facilities for these purposes;

To establish and maintain gauging stations on rivers and their tributaries;

To issue bulletins, during freshet and flood conditions, forecasting gauge heights and the times thereof;

To maintain a complete inventory of all the water resources of the Commonwealth; collect all pertinent data, facts and information in connection therewith; classify, tabulate, record and preserve

the same; and upon the basis thereof determine the points at which storage reservoirs may be constructed for flood control, for municipal and domestic supply, hydraulic and hydroelectric power, steam raising, stea condensation, navigation, and other utilization; and generally to devise all possible ways and means to conserve and develop the water supply and water resources of the Commonwealth for the use of the people thereof;

To construct, maintain and operate works for water storage, flood control, channel improvement or other hydraulic purposes;

To cooperate with municipalities in the construction and completion of projects and improvements for the conservation of water and the control of floods;

To make studies, surveys and examinations of local, State or national flood conditions, causes and effects and prepare designs, plans and recommendations for the adequate and reasonable control of flood conditions and for saving life and property damage by floods;

To cooperate in the activities of and with State or local agencies, departments, boards, bureaus, commissions and political subdivisions, and with the Federal government or any appropriate agency thereof, in the planning of accomplishing an overall long or short term flood control, either national, local or sectional, and to cooperate with the Congress of the United States in the preparation on presentation of legislation tending to effectuate flood control;

To enter into agreements to sell, lease or otherwise dispose of any iron, coal, limestone, fire-clay, oil, gas and other minerals, except sand and gravel and minerals deposited as silt created by dams, that may be found in or beneath the beds of navigable streams or bodies of water where the beds thereof are owned by the Commonwealth on such terms and conditions as the Department deems to be in the best interest of the Commonwealth;

To exercise the powers and perform the duties invested in the Department by law with regard to:

(1) Applications for corporation charters for the supply of water for the public, or for the supply, storage and transportation of water and water power for commercial and manufacturing purposes or for any other water or water power company;

(2) Agreements for the merger and consolidation of two or more such corporations;

(3) The sale, assignment, disposition, transfer and conveyance of the franchises and properties of any such corporation to any

other such corporation;

(4) Consents or permits for the construction of dams and other water obstructions or of any changes or additions thereto, and consents and permits for changing or diminishing the course, current or cross-section of any stream or body of water;

(5) Permits for the condemnation or appropriation of waters, or for the construction of hydraulic works;

(6) Applications for new or additional sources of supply of water or water power;

(7) Applications by companies for the approval of the construction, operation and maintenance of tunnels under navigable rivers; and

(8) The extension of time fixed by law for the beginning or completion of the works of water or water power companies, inquire into the status quo of water or water power charters, and as to the due diligence and bona fide intent of water and water power companies to fulfill the requirements of the law;

To issue water works permits, stipulating therein the conditions under which water may be supplied to the public, and to administer the laws pertaining to the preservation of the purity of the waters of the State for the protection of the public health;

To investigate, hold hearings upon, and determine any question of fact regarding the purity of water supplied to the public by any public utility over which the Pennsylvania Public Utility Commission has jurisdiction;

To develop and operate a State-wide water quality monitoring system and a sanitary chemistry laboratory;

To conduct water quality management and aquatic biology studies, and to develop and maintain a comprehensive water quality management plan for the State's ground waters, streams, lakes and estuaries;

To coordinate the State's water quality management and planning activities with other State agencies and with pertinent Federal, interstate and international organizations;

To administer and enforce the laws of the Commonwealth regarding the prevention and abatement of pollution of the waters within the State;

To study, investigate and report ways and means of eliminating all substances and materials which pollute or tend to pollute the

streams and waters of the Commonwealth, and to determine and recommend methods of preventing pollution detrimental to the public health, or to the health of animals, fish or aquatic life, or detrimental to the use of waters for recreational purposes;

To develop technical standards for the construction of water and sewerage facilities, and procedures for the inspection of plant operation control and enforcement activities.

To review and take appropriate action on all permit applications for the disposal of wastes or other substances within or along the streams of the State, and to issue, modify, suspend or revoke such permits pursuant to the laws of the Commonwealth and to the rules and regulations of the Department; and

To make such inspections of public or private property as are necessary to determine compliance with the provisions of the laws of the Commonwealth and the rules, regulations, orders or permits issued thereunder.

(4) Mining powers and duties. Included among these are:

Execute faithfully the mining laws of the Commonwealth, and for that purpose, cause lawfully qualified mine inspectors to enter, inspect and examine any mine or colliery within the Commonwealth;

Make such examinations and investigations as are necessary to make recommendations on matters pertaining to the general welfare of coal miners and others connected with mining, and to the interests of mine owners and operators, in the Commonwealth;

Give such aid and instruction to the mine inspectors as may be needed to protect the health and promote the safety of all persons employed in and about the mines;

Inspect deep and open pit coal mines, and enforce rules and regulations regarding safety precautions;

Maintain records of mine inspections and examinations;

Investigate the use of new mining equipment;

Examine and rule on applications for certificates for mine supervisory positions;

Enforce rules and regulations regarding backfilling open pit mines subsequent to coal extraction operations;

Enforce rules and regulations regarding drainage pollution abatement and control for active open pit mines;

Enforce the rules and regulations regarding the disposal of mine wastes in the areas of past and current coal mining operations;

Plan, develop and implement programs in connection with abandoned open pit and deep coal mines to include sealing, closing or backfilling, filling voids, drilling bore holes, constructing ditches or flumes to relieve flooding and hazardous conditions caused by mine water, and extinguishing fires in abandoned mines and culm piles;

Operate and maintain projects for the control and drainage of water in anthracite coal formations;

Enforce the rules and regulations regarding the underground storage of gas under workable coal seams, and those related to the drilling and operation of gas and oil wells;

Implement and carry out programs and projects for the abatement of pollution from mine drainage originating from abandoned open pit and underground coal mines;

Administer and enforce the laws, rules and regulations pertaining to the prevention and abatement of mine drainage pollution originating from active open pit and underground coal mines; and

Review and process applications for permits for new mines and for the disposal of mine drainage.

(5) Abatement of nuisances. Responsibilities in this area include:

To protect the public from unsanitary conditions and other nuisances, including any condition which is declared to be a nuisance by any law administered by the Department;

To cause examination to be made of nuisances, or questions affecting the security of life and health, in any locality, and to enter, examine and survey, without fee or hindrance, all grounds, vehicles, apartments, buildings and places within the Commonwealth;

To order such nuisances, including those detrimental to the public health, to be abated and removed;

To enter upon the premises and abate or remove a nuisance if the owner or occupant of any premises fails to comply with any order of the Department for the abatement or removal thereof;

To file a claim or maintain an action provided by law against such owner or occupant for the purpose of recovering the expense of

abating or removing such nuisance; and

To cooperate with the Department of Health to avoid any duplication of inspection or overlapping of functions.

(6) Geology powers and duties. These include:

To conduct and maintain a thorough and extended topographic and geologic survey of Pennsylvania to disclose such chemical analysis and location of ores, coals, oils, clays, soils, fertilizing and of other useful minerals, and of waters, as necessary to afford the agricultural, mining, metallurgical and other interests, and the public, clear insight into its resources;

To make a complete collection of specimens of the geological and mineral resources of Pennsylvania, and to deposit same in the State Museum;

To prepare for publication the results of the survey through the Department of Property and Supplies;

To enter into and upon all lands and localities in the State for the purpose of the survey but without doing damage to the property;

To avail itself as fully as possible of the information, maps and surveys possessed by citizens and corporations of the State relative to the geology and topography of the State; and

To arrange for the cooperation of the U. S. Geological Survey, or such other National organization as may be authorized to engage in such work.

Department of Transportation. The Department of Transportation was created by Act 120, approved May 6, 1970, for the development of adequate, safe and efficient transportation facilities and services, including highways, roads, railways, waterways and airports, but excluding recreational boating. The act, amending the Administrative Code of 1929, abolished the Department of Highways and the Pennsylvania Aeronautics Commission, creating the Department of Transportation and making changes in various boards and commissions related to the new Department. Also, a list of environmental constraints was specified for consideration in the development of transportation facilities and services. The following outline of the Departmental responsibilities are related, either directly or indirectly to water and related land resources, and are abstracted from the total list of powers and duties:

To enter into contracts for designing, constructing, repairing or maintaining State designated highways, and other transportation

facilities and rights-of-way, airports or any parts thereof, as may now or hereafter be provided by law;

To consult with appropriate officials as designated by the chief administrative officer of the Department of Environmental Resources, Department of Community Affairs, Department of Health, State Planning Board and the Fish Commission regarding the environmental hazards and the conservation, sanitary, recreation and social considerations that may arise by reason of the location, design, construction or reconstruction of any transportation or air facility;

No highway, transit line, highway interchange, airport or other transportation corridor or facility shall be built or expanded in such a way as to use any land from any recreation area, wildlife and/or waterfowl refuge, historic site, State forest land, State game land, wilderness area or public park, unless there is no feasible and prudent alternative to the use of such land, and the following criteria are considered:

(1) Planning - consideration of environmental, conservation, health, recreational and social functions of planning, transportation planning statistics, and economic research, program and budget and advance planning; and

(2) Local and Area Transportation - services to municipalities; local and public transportation; planning, development and funding of local and public transportation; technological development of air, rail, water or other modes of transportation (except recreational boating and ferry licensing); environmental design; improvement of transportation services and airports and aircraft; urban mass transportation systems;

To coordinate the transportation activities of the Department with those of other public agencies and authorities;

To cooperate with interstate commissions and authorities, State departments, councils, boards, commissions, authorities and other State agencies, with political subdivisions of the Commonwealth, with appropriate Federal agencies, public agencies in other States, and with interested private individuals and organizations in the coordination of the following:

> "...such corridor or facility is planned and constructed so as to minimize harm to such recreation area, wildlife and/or waterfowl refuge, historic site, State forest land, State game land, wilderness area or public park"; and

To follow the hearing procedures required for Federal-aid transportation programs pursuant to titles 23 and 49 of the United

States Code as amended, and the regulations and procedures thereunder even though the transportation route or program does not contemplate the use of or actually employ Federal funds. At the hearings the Department shall consider the following effects of the transportation route or program:

(1) Residential and neighborhood character and location.

(2) Conservation, including air, erosion, sedimentation, wildlife and general ecology of the area.

(3) Noise, and air and water pollution.

(4) Multiple use of space.

(5) Replacement housing.

(6) Displacement of families and business.

(7) Recreation and parks.

(8) Aesthetics.

(9) Public health and safety.

(10) Fast, safe and efficient transportation.

(11) Civil defense.

(12) Economic activity.

(13) Employment.

(14) Fire protection.

(15) Public Utilities.

(16) Religious Institutions.

(17) Conduct and financing of government including the effect on the local tax base and social service costs.

(18) Natural and historic landmarks.

(19) Property values.

(20) Education, including the disruption of school district operations.

(21) Engineering, right-of-way and construction costs of the

project and related facilities.

(22) Maintenance and operating costs of the project and related facilities.

(23) Operation and use of existing transportation routes and program during construction and after completion.

The State agency officials named above shall make a report at the public hearings indicating the environmental effects of the proposed transportation route or program. The Department of Transportation shall not construct or reconstruct any portion of the transportation route or program unless the Secretary of Transportation makes a written finding published in the Pennsylvania Bulletin that:

(1) No adverse environmental effect is likely to result from such transportation route or program, or

(2) There exists no feasible and prudent alternative to such effect, and all reasonable steps have been taken to minimize such effect, where "environmental effect" refers to the effects listed above.

II - SPECIAL PURPOSE DISTRICTS, REGIONAL AND FIELD DIVISIONS

Special purpose districts in Pennsylvania are means by which a State agency's program is implemented and administered. The types and sizes of districts vary, of course, with the different agencies, i.e., each agency has its own basis for districting the State, which is usually dependent on the economics and the program involved. In practically all cases, district divisions are along county lines, and a district usually consists of several counties.

FORESTS DISTRICTS

The nearly two million acres of State forests are managed and protected by 20 forests districts that cover the entire State. Each district is under the charge of a District Forester with a staff of one or more technical foresters and a varying number of non-technical forest foremen. The District Forester is the representative for the safety and efficient management of the State forests in his district.

STATE PARK REGIONS

The State parks in Pennsylvania, which currently (January, 1971) total approximately 300,000 acres, are administered locally through four State park regional offices. These regions cover the entire State, and are approximately equal in size. Individual State parks within each region are managed by park superintendents who are responsible for the maintenance and improvement of park facilities and the enforcement of rules and regulations.

FLOOD CONTROL DISTRICTS

The flood control district is a local area within a watershed that has been identified as needing flood protection. The concept originated in the Flood Control Act of August 7, 1936 (P. L. 106) as the basic unit with which to plan projects and administer funding. Since that time, other devices have developed as the more pressing flood control problems were solved, and the district concept has been used with less frequency. The flood control district requires certain stipulations, such as the needed lands for a project from the local benefactors of flood protection, thus constituting an agreement between the local governing body and the State agency providing the protection.

SOIL AND WATER CONSERVATION DISTRICTS

Pennsylvania's program for the conservation of soil and water

resources and prevention of soil erosion is administered by county units known as Soil and Water Conservation Districts. The program is voluntary, and all but two of Pennsylvania's counties are so organized. Each district is managed by a board of directors consisting of seven members, one of which is a county commissioner and the remaining appointed by the board of county commissioners. These appointees consist of four practical farm directors and two urban directors. The State Soil and Water Conservation Commission shall approve and coordinate the programs of several soil and water conservation districts or projects; appropriate among the several cooperating organizations any funds alloted from State or Federal sources; and be responsible for the expenditures of such funds by the districts.

FISH REGIONS

The enforcement program of the Pennsylvania Fish Commission is administered by four regional offices. These regions cover the entire State, and consist of groups of counties. The county is the basic jurisdictional unit of local waterway patrolmen. The basis of selection of appointees to the Fish Commission itself is by geographic regions of the Commonwealth, that at all times one and only one member shall be a resident of each of the regions, of which there are eight.

GAME FIELD DIVISIONS

The programs of Pennsylvania's Game Commission are administered through six field division offices. These field divisions cover the entire State in groups of counties. With the exception of the propagation programs, the field division offices are responsible for the administration of Game Commission programs and duties within their respective field divisions. The principal responsibilities on the field division level are the enforcement of game laws and regulations, and the management of State game lands or land leased by the Commission.

ENVIRONMENTAL PROTECTION DISTRICTS

The administration of Pennsylvania's environmental protection programs, and pollution control programs (air, land and water), is handled through seven regional offices. The regional responsibilities are normally associated with the issuance of permits, inspections, investigation of complaints, monitoring and surveillance.

HUMAN SERVICES DISTRICTS

There are six regions of the State, recently organized to administer Pennsylvania's health and welfare programs on the local level. The regions cover the State, and are proportioned

approximately as to population, i.e., the size of a region (number of counties) is smaller in more urban areas.

REGIONAL PLANNING COMMISSIONS

At the present time areawide or regional comprehensive planning in Pennsylvania is being undertaken under several State and Federal programs and by a variety of local organizations. Those most relevant to water resource planning are described below. The State has recently undertaken a major reevalation of this activity and is now initiating actions designed to consolidate and strengthen regional planning and development in the Commonwealth.

Twelve Metropolitan Planning Commissions and one "non-metropolitan" regional commission have been declared eligible for Federal comprehensive planning assistance funding ("701") by the Pennsylvania Department of Community Affairs and the U.S. Department of Housing and Urban Development. Four of the metropolitan and the one "non-metropolitan" commissions serve multi-county jurisdictions. The remaining eight are single county programs. All thirteen are designated metropolitan clearinghouses under U.S. Office of Management and Budget Circular A-95. These agencies are authorized to undertake a broad variety of planning activities, including transporation, housing, open space, water supply and waste disposal, economic studies and land use. In addition to HUD funding, comprehensive planning agencies receive financial and technical support from the Pennsylvania Department of Community Affairs and the State Planning Board (through purchase-of-service agreements).

The Intergovernmental Cooperation Act of 1968, implemented by U. S. Office of Management and Budget Circulars A-95 and A-98 established a mechanism whereby State and metropolitan and regional "clearinghouse" agencies possessing planning competence could review and comment upon projects receiving Federal assistance prior to formal application and approval. Of the fifteen clearinghouses now functioning and covering 34 counties within the Commonwealth, seven are multi-county and eight serve single counties. Designation is made by the Governor with the advice of the State Planning Board. The State Planning Board as the State Clearinghouse, provides coordination and technical assistance to metropolitan and regional clearinghouses.

Seven Local Development Districts in 52 Appalachia counties, have been organized under Appalachia Regional Development Act of 1965. Districts plan, coordinate and provide technical assistance in economic development and related concerns and assist in the administration of the Appalachia program. Several districts have (or are moving toward) combined comprehensive planning and

development functions and at least three have been designated Regional Clearinghouses under U.S. OMB Circular A-95. Program is administered by Pennsylvania Department of Commerce (Bureau of State and Federal Aid) using State and Federal (Appalachia Regional Commission) funding.

Three Economic Development Districts covering 18 Appalachia counties have been designated by the U.S. Department of Commerce based upon economic criteria (unemployment, etc.). In Pennsylvania the EDD programs are combined with the Appalachian local development districts. The districts are charged with planning for funded directly by the Economic Development Administration, U.S. Department of Commerce.

III - POLITICAL SUBDIVISIONS

THE COUNTY

The Pennsylvania county is the chief political subdivision of the Commonwealth; its history began with the Penn Proprietary. In the absence of a strong township government, the county had a vigorous growth in Pennsylvania; however, during the past century, the powers and activities of county government have changed, even though its structure and organization have not. Many of its functions, such as the construction and maintenance of roads and the welfare programs, were taken over by State agencies. In recent times, however, the county has expanded its activities and services in such fields as physical planning (which includes water and land resources), housing, redevelopment, and so on. Such services are highly beneficial in heavily populated urban areas in which there are numerous cities, boroughs and townships, many of which are too small to provide modern urban services of government.

There are sixty-seven counties in Pennsylvania, including the consolidated city-county of Philadelphia, and all the people in the State live in and come under the jurisdiction of one of them. The largest in population is, of course, Philadelphia with about two million people; the smallest is Forest, in the northwestern part of the State, with less than 5,000. For purposes of legislation, the counties are divided into nine classes; but while the larger urban counties differ in needs and activities from the small rural ones, all counties (except Philadelphia) have the same basic organization and powers.

The main functions of the Board of County Commissioners are the administration of elections, the assessment of property for local tax purposes, the construction and maintenance of county buildings and other public facilities, the local administration of welfare, and administration of justice corrections. Other officials who, because they are elected, are to a large extent independent of the Board of County Commissioners. These include the sheriff, coroner, district attorney, prothonotary, clerk of the courts, registrar of wills, recorder of deeds, two jury commissioners, and financial officers. The county court, the elected officers and the county commissioners also appoint additional officials and other personnel as they are needed.

THE BIG CITIES

There are four classes of cities in Pennsylvania, so designated by State law on the basis of population for purposes of legislation. Philadelphia is the only city of the first class, Pittsburgh the only city of the second class, and Scranton the only city of second class A. The 48 other Pennsylvania cities are of the third class.

CITIES OF THE THIRD CLASS

More than a million and a half people live in the 48 cities of the third class. The cities range in population between 5,000 and 140,000, although new cities of the third class must have a population of 10,000, and those over 135,000 may become cities of the second class A.

Under this Optional Third Class City Charter two additional forms of city governments are available. The present commission form and the two additional forms are outlined below.

Commission. The mayor and 4 other members constitute the council and governing body of the city with the mayor acting as president. Each of the members is in charge of one of the 5 major departments: Public Affairs (always headed by the mayor), Accounts and Financial, Public Safety, Streets and Public Improvements, and Parks and Public Property. These officials, along with the controller and treasurer, are elected at large. The council appoints all other officers and employees, notably the city clerk, the city engineer and the city solicitor.

Mayor - Council or "Strong-Mayor". The city council has 5, 7, or 9 members who are elected at large for overlapping terms. A mayor and a controller are also elected. The council has legislative powers exercised by ordinance. It may create, reorganize and abolish departments which cannot exceed 10 in number including a Department of Administration. This is headed by a business administrator under the direction of the mayor. Council appoints a city clerk, but the mayor appoints all the other officers and department heads with the consent of council. The department heads appoint subordinates with the consent of the mayor. The mayor is the city's chief executive and enforces its ordinances. He may attend meetings of the council but has no vote; however, he may veto ordinances but two-thirds of council may override the veto. The mayor supervises the work of all the city department and submits an annual budget for council approval.

City-Manager. In this system, all authority is lodged with the council which is composed of 5, 7, or 9 members elected at large for overlapping terms. The council elects one of its members as mayor, who presides at council meetings and may vote but has no veto. The council appoints the city clerk, the city treasurer and the city manager. The manager is the chief administrator of the city. He executes and enforces laws and ordinances, participates in council meetings but has no vote, makes recommendations to the council, prepares and enforces the budget, and investigates the affairs of any officers and departments under his jurisdiction. He appoints and may remove department heads and subordinates, and may authorize department heads to appoint and remove their own subordinates.

As of January, 1971 there were 32 commission cities, 10 mayor-council cities and 6 council-manager cities. A number of commission cities have in recent years appointed a managing director as assistant administrator to each department head. A city wishing to change from a commission type to another form must present a referendum to the voters to establish a charter commission, which draws up a plan of government within nine months, and the electorate must vote favorably on the adoption of the optional plan. If the vote fails, the city must keep its original commission form, and cannot reconsider the plan voted on for four years, although a new plan may be considered in two years. If the new plan is adopted, it cannot be discarded for four years.

THE BOROUGH

The present type of borough government, known as the "weak-mayor" form, governed all incorporated municipalities within the State during the 19th and early 20th centuries. Most of the present cities were boroughs first and became cities as their populations increased. Characterized by a strong and dominant council, a weak executive, and the presence of the other elected officers with powers independent of the council, it can best be described as "decentralized" and "fragmented". Of the 960 boroughs in the State, 54 have more than 10,000 population and 372 have less than 1,000 inhabitants. The total population residing in boroughs is approximately 2,800,000 people.

The governing body of the borough is an elected council and mayor. They are assisted by other officials such as the solicitor, engineer, manager, secretary, tax assessor, tax collector, treasurer, auditors or controller, justices of the peace, constables, chief of police, fire chief, healt officer, the planning board, zoning commission and other personnel depending upon the size of the borough and its activities. Some of these are elected: the taxcollector, tax assessor, justice of the peace and the auditors. Most of the others are appointed by the borough council. When the borough is not divided into wards there are seven councilmen; in boroughs divided into wards, at least one and not more than two are elected from each ward. The powers of the council are broad and extensive, covering virtually the whole range of urban municipal functions. Its decisions are in the form of ordinances and resolutions. To be effective, these must be passed by the majority of members voting and signed by the mayor. If he vetos an action of council, another majority can override it.

In almost one hundred of the Pennsylvania boroughs, the chief administrative officer is a borough manager appointed by the council. He is responsible for carrying out the policies and enforcing the ordinances of council, thus relieving the members of the council from much of the routine administration. The manager, usually a trained and experienced administrator, is given authority to manage

the affairs of the borough, subject to the will of the council. Where there is no manager, the members of council working in committees undertake direction of the borough's affairs.

THE TOWNSHIP

There are two classes of townships in Pennsylvania. The First Class, which numbers close to 100 and contains more than a million people, are located on the periphery of large cities and boroughs. The Second Class, numbering about 1,500 and containing more than three million people, are found in the more rural areas of the State. The First Class township has more governmental services than the Second Class; however, under the law that governs the latter, they have the power to carry on almost as many functions as the First Class townships and boroughs.

In order to become a First Class township, a Second Class township must contain at least 300 persons per square mile, but it may remain in the Second Class if it wishes. Parts of Second Class townships may be annexed to cities and boroughs upon the affirmative vote of the residents of the territory to be annexed, but in First Class townships such action requires the affirmative majority of all residents of the township. Thus, townships of the First Class are protected from being divided up in case some of their residents' desire to be attached to neighboring municipalities.

The chief difference between these two classes of townships is not in the powers they may exercise, but in the structure of the governing bodies and their administration. In First Class townships, there are five commissioners when the township is divided into less than five wards or has no wards at all, and one for each ward where there are more than five (with a maximum of 15 wards, thus 15 commissioners). This feature allows for representation of various geographic areas and settlements within the township. The governing body of Second Class townships is composed of, except as otherwise provided, three supervisers elected at large.

Other township officials in both classes include the assessors, tax collectors, the justice of the peace, the constable, auditors and a treasurer, all of whom are elected in Second Class townships. Appointive officers include the secretary, the treasurer, the township manager, chief of police, fire chief, engineer, solicitor and others as the activities and the population of each township warrant.

The strictly rural townships of the State are mainly concerned with township roads for which they receive sizeable grants in highway aid from the Commonwealth. Sometimes they contract with a neighboring borough or other local units for such services as police and fire protection, water supply and sewerage.

THE MUNICIPAL AUTHORITY

The Municipal Authority is a special kind of local unit. It is a body politic and corporate established by law for the purpose of acquiring, holding, constructing, improving, maintaining and operating projects for public use. In the water resources field, these include flood control projects, park and recreation facilities, sewers and sewage treatment works, water supply systems and swimming pools. The projects must be devoted wholly or partially to public uses. They may not at any time pledge the credit of taxing power of the Commonwealth or any of its subdivisions, nor can the State or local governments be liable for the payment of the principal or interest on any of its obligations. In other words, the costs incurred by the Authority for its projects--construction, maintenance and operation--must be met from revenues earned by the project itself such as water rates and sewer rentals.

The Authority is established by action of one or more municipalities, including counties, cities, towns, boroughs, townships and school districts, in the form of an ordinance. The governing bodies of the parent local unit or units appoint the members of the Authority's board. This board, if incorporated by one local unit, has five members appointed for staggered five year terms. If the Authority is incorporated by two or more municipalities, it has at least the number of local units incorporating the Authority, but not less than five. This board carries the work of the Authority which is empowered by law to acquire property, undertake projects, make regulations for the management of the projects, appoint officers and employees, charge and collect rates for the purpose of paying for expenses of the Authority, borrow money and issue bonds, make contracts, have power on eminent domain and carry on other business of the Authority within the terms of the Municipality Authorities Act of 1945.

Authorities were first established in Pennsylvania in 1933 for Allegheny County alone, but in 1935 the legislation was extended to include other local units, and later to include school districts also. The main reason for their original establishment was the restrictive limits in the borrowing power of local units imposed by Pennsylvania's Constitution. At that time, the overall limits were seven per cent of the assessed valuation of taxable property, and only two percent without approval of the electorate. During the economic depression of the 1930's, local revenues from taxation were sharply reduced and demands for new facilities increased sharply. Many local units reached their borrowing limits and thus were unable to finance necessary projects. Authority legislation made it possible to borrow outside the constitutional limitations, thus allowing local units to expand their revenue-producing facilities. The legislation also provided a means for joint operation of such facilities by more than one local unit. When the construction

of projects such as water supply and sewage systems has been completely financed, the buildings and facilities may be transferred to the municipalities which originally established the Authority.

IV - MECHANISMS FOR COORDINATION

INTERSTATE

Pennsylvania's Commission on Interstate Cooperation is, as its title implies, an advisory body that promotes cooperation with adjacent states through compacts. The Commission is composed of 21 members as follows: seven State officials appointed by the Governor from different executive agencies, and 14 members of the General Assembly, seven from the Senate and seven from the House of Representatives. The Governor is an honorary member of the Commission.

In addition to dealing with isolated problems that are common to Pennsylvania and other states, the Commission studies and advises on comprehensive problems of a regional nature, such as those of a major river basin. On this scope, the river basin states form a compact agreement for mutual assistance in handling the water resources problems in the basin. Pennsylvania is a partner in such compacts, which cover the entire area of the State.

The oldest of these, the Delaware River Basin Commission, developed into a unique public institutional arrangement for the management of water resources: it became, upon ratification by Congress in 1961, the first Federal-interstate compact in the Nation. By this arrangement the signatory states (Delaware, New Jersey, New York and Pennsylvania) became partners with the Federal government in the implementation of water resources planning and management within the Delaware River Basin. This partnership put the states on an equal level with the Federal government in the decision-making process.

In January, 1971, a similar Federal-interstate compact became effective for the Susquehanna River Basin. This involves the States of Maryland, New York, and Pennsylvania. Like the Delaware River Basin Commission, the Susquehanna compact is a partnership arrangement between Congress and the involved States for the management of water resources within that basin. As of this writing (January 1971), the organizational structure for the Susquehanna compact had not been formed; however, since its functions are quite similar to those of the Delaware River Basin Commission, its organization should also be similar.

The same type of Federal-interstate compact is being considered by Congress for the Potomac River Basin, a small portion of which drain the southern part of Pennsylvania. The states involved are Maryland, West Virginia, Virginia and Pennsylvania. These states are already in a compact agreement concerned with the abatement of the water pollution in the basin.

The remaining basins in Pennsylvania--the Great Lakes Basin and

the Ohio River Basin--are associated with the Federal Water Resources Council. The states in the Great Lakes Basin formed a compact in 1967 under Title II of the Water Resources Planning Act (P. L. 89-80), and the same type of arrangement become effective in January 1971 for the states in the Ohio River Basin.

Pennsylvania is also a party in the regional development compact between the Federal government and the 13 states having regions within the economically depressed area known as Appalachia. In Pennsylvania, this region covers all counties except those in the southeastern portion of the State, i.e., the lower portions of the Delaware and Susquehanna Basins. While economic development is the principal goal of this compact--known as the Appalachia Regional Development Commission--the development of water resources is one of the significant aspects of this effort.

FEDERAL-STATE

In Pennsylvania, the Department of Environmental Resources coodinates comprehensive water resources studies and activities involving Federal and State agencies. The Secretary of the Department represents Pennsylvania, as designated by the Governor, on coordinating committees for river basin studies, and is the Governor's alternate on the Delaware River Basin Commission. The Department also has liaison with the Federal Water Resources Council in the development of criteria for water resources planning. The Department coordinates the programs of the U. S. Army Corps and Engineers to the needs of the State, and works closely with the Soil Conservation Service of the U. S. Department of Agriculture on P. L. 566 projects in the State. The Department also, due to its diversified functions, coordinates Federal programs concerned with forestry, water-related recreation, and water pollution.

Federal grants-in-aid are administered directly by those State agencies concerned with respective programs through the Bureau of the Budget of the Governor's office. There is one exception, however: the State Planning Board administers certain HUD grants for planning purposes. The State Planning Board, along with Pennsylvania's Department of Commerce, also plays a leading role as representative on the Appalachia Regional Development Commission.

STATE OF DELAWARE

Prepared by

State of Delaware
Department of Natural Resources and Environmental Control
Division of Environmental Control

April 1971

STATE OF DELAWARE
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STATE OF DELAWARE

I - ADMINISTRATIVE STRUCTURE

INTRODUCTION

The basic administrative structure of the State of Delaware concerned with water-related projects consists of the Department of Highways and Transportation, and the Department of Natural Resources and Environmental Control (Fig. S-1 (DEL)). The Department of Highways and Transportation has authority and responsibility concerning beach erosion control and related activities; the Department of Natural Resources and Environmental Control has a much wider area of responsibility in the fields of water and related land resources (Fig. S-2 (DEL)).

This agency's powers, duties, and functions are outlined in Chapter 80, amending the Delaware Code, Title 29, specifically to establish this Department (House Bill No. 453). The Department is, in turn, comprised of four main divisions: the Division of Fish and Wildlife; the Division of Parks, Recreation and Forestry; the Division of Soil and Water Conservation; and the Division of Environmental Control.

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

The Secretary of the Department of Natural Resources and Environmental Control is appointed by the Governor with the advice and consent of the Senate, and serves at the pleasure of the Governor. The Secretary is responsible for the administration and operation of the Department, and appoints, with the written approval of the Governor, the heads of the four divisions within the Department. Should the position of Secretary be vacant, the Governor appoints the four division directors. The Secretary is responsible for delegating to these directors as much authority as possible, maintaining control over them through the rules and regulations governing the administration and operation of the Department.

Division of Fish and Wildlife (§ 8004). This Division has assumed all functions which were previously vested in the Board of Game and Fish Commissioners and the Delaware Commission of Shell Fisheries, and also performs the administrative, ministerial, fiscal, and clerical functions of the Atlantic States Marine Fisheries Commission (Title 7, Delaware Code, Chapter 15).

Within the Division are the Council on Game and Fish, and the Council on Shell Fisheries. Each is composed of seven members, appointed by the Governor, and each elects its own chairman from among

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its membership.

The Council on Game and Fish serves in an advisory capacity to the Director of Fish and Wildlife, and considers matters relating to the protection, conservation and propagation of all forms of fish and protected wildlife of the State of Delaware (§ 8005).

The Council on Shell Fisheries is also advisory and considers matters relating to the control and direction of the State's shellfish industry and the protection, conservation and propagation of shellfish in Delaware (§ 8006).

Division of Parks, Recreation and Forestry (§ 8007). This Division assumed all of the powers, duties, and functions of the State Park Commission of Delaware, the State Forestry Department, and the State Forestry Commission. It also performs the administrative, ministerial, fiscal, and clerical functions of the Recreation Advisory Council (§ 8009).

There are two other advisory councils within this Department, the Council on Parks and the Council on Forestry. Both are made up of not more than seven members appointed by the Governor, and each elects its chairman from among its members.

The Council on Parks considers matters relating to the preservation and protection of the scenic, historic, scientific, prehistoric, and wildlife resources of the State for the purpose of public use and enjoyment (§ 8008).

Division of Soil and Water Conservation (§ 8011). This Division assumed all of the powers, duties, and functions of the Delaware Soil and Water Conservation Commission, and performs the administrative, ministerial, fiscal, and clerical functions of the Board of Ditch Commissioners.

The Division's Council on Soil and Water Conservation serves in an advisory capacity to the Director of Soil and Water Conservation, and considers matters relating to the conservation, protection, development, and utilization of land and water resources in the State (§ 8012).

The Council is made up of not more than seven members, appointed by the Governor, and the Council's chairman is elected from among its members.

Division of Environmental Control (§ 8013). The Division assumed certain powers, duties, and functions of the Delaware Water and Air Resources Commission, except those sections which specifically are retained by that Commission, namely authority over subaqueous lands. The Division has jurisdiction over the administration and

enforcement of all regulations pertaining to water resources, water wells, and the licensing of water well contractors. This Division also performs the administrative, ministerial, fiscal, and clerical functions of the State of Delaware as a member of the Delaware River Basin Commission.

The Council on Environmental Control advises the Director of Environmental Control, and considers matters relating to the development, utilization, and control of all water, underwater, and air resources of the State (§ 8014).

The Delaware Water and Air Resources Commission operates through the Department of Natural Resources and Environmental Control under the authority of the Delaware Water and Air Resources Act (Delaware Code, Title 7, Part VII, Chapter 61). (See II - POLICY AND ADMINISTRATIVE PRINCIPLES UNDER THE STATE OF DELAWARE WATER AND AIR RESOURCES ACT.)

The Governor's Council on Natural Resources and Environmental Control (§ 8015) is composed of the chairmen of the councils within the respective Divisions of the Department, one of whom is designated by the Governor as Chairman of the Governor's Council and serves at the pleasure of the Governor.

The Council advises, recommends, and refers to the Secretary of the Department those matters which are of Departmental concern, and considers such other business as may be referred to it by the Governor or the Secretary.

II - POLICY AND ADMINISTRATIVE PRINCIPLES UNDER THE STATE OF DELAWARE WATER AND AIR RESOURCES ACT

The Water and Air Resources Act, approved by the Governor July 1, 1966, is "an Act relating to water, underwater lands, and air use and conservation; providing for a comprehensive commission to regulate the use of water, underwater lands, and air, revising and consolidating the laws relating to water, underwater lands, and air; providing for the exploration in, and granting rights in submerged and subaqueous land; abolishing the water pollution, air pollution, and geological commissions and creating a water and air resources commission."

STATEMENT OF POLICY

Delaware's policy is (1) to develop, utilize, and control the water resources and public subaqueous lands to make the maximum contribution to the public benefit, and (2) acting through the Water and Air Resources Commission, in the exercise of the State's sovereign power, to control the development and use of the water resources and subaqueous lands of the State so as to effectuate full utilization, conservation, and protection of these resources.

ADMINISTRATIVE PRINCIPLES

This section outlines the principles by which the regulations governing the use of water resources and public subaqueous lands are administered. The regulations, of which there are three other than the section on definitions and administrative principles, cover the requirements for the installation and use of water wells, the licensing and responsibilities of water well contractors, and the requirements for the use of public subaqueous lands.

2.01* The following administrative principles shall be adhered to by the Commission in all matters involving the use of the water resources of the State:

a. The water resources of the State are considered to be public waters and public wealth and the usage of such waters shall be allocated on the bases of equitable apportionment and reasonable beneficial use. Waters which flow vagrantly over land surface shall not be regarded as public waters and the owner of land on which such waters fall or flow shall have the right to its use, provided that no damages result to other persons.

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* Section 2, paragraph 1 (of Regulation I).

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b. A right to a water allocation can only be acquired by a permit issued by the Commission or by having been a reasonable beneficial use prior to the adoption of these Regulations. No right to the use of water can be acquired by adverse use or adverse possession.

c. It is recognized by the Commission that the water resources in and on the State of Delaware may be physically and hydrologically related and that where such a relationship exists approval of uses of such waters shall take into account this relationship.

d. The rights of the public regarding the water resources of the State are considered to be usufructuary upon approval by the Commission. Prospective water users within the incorporated limits of any town, city or other applicable jurisdiction shall be required to obtain permission from said governing body for any allocation sought, as well as from the Commission, where their jurisdictions are in effect. Prospective water users not located within the confines of a governing body serving water, but desiring to obtain water from that governing body, shall likewise secure permission from both the governing body and the Commission, where their jurisdictions are in effect. The usufruct shall be in effect until such time as the Commission establishes that it is not being exercised or the use is no longer reasonably beneficial. The allocation may be altered upon request by the permittee, or by the Commission in times of a water emergency. If a water emergency is declared by the Governor, all permittees using a common supply will have their allocations decreased in accordance with the following priority schedule: (i) sustaining life, (ii) maintaining health, (iii) increasing wealth.

e. Any non-wasteful use of the surplus water resources of the State shall be considered to be a reasonable beneficial and legal use provided that sufficient and justifiable objections by riparian and other property owners are not presented to and accepted by the Commission, after public hearing, and no unreasonable damage results.

f. The decision of the Commission as to whether or not a use will be reasonably beneficial will be based in part on the results of special studies and compliance with the statewide comprehensive master water plan at such time as either or both are available and/or applicable.

g. Allocations granted by the Commission may be transferred subject to approval by the Commission, and the Public Service Commission where its jurisdiction is in effect, but until such time as a transfer is authorized, the allocated water may only be put to the use for which a permit was issued at the location specified in

the permit.

h. Permits issued shall be valid for a period not to exceed one (1) year. If construction is not started by that time, the permit shall be made void unless a renewal is applied for and granted.

2.02 The following administrative principles shall be adhered to by the Commission in all matters involving the use of underwater lands:

a. Ungranted subaqueous lands lying beyond the mean high water mark in navigable waters are public lands, and all permanent or quasi-permanent uses of such lands shall be pursuant to a recommendation for approval by the Commission and subsequent approval of the Governor.

b. Any use to be made of the lands lying between the high and low water marks, which may result in damages to the water resources or have a direct effect on public lands, shall be pursuant to a recommendation for approval by the Commission and subsequent approval of the Governor.

c. The use of privately owned lands lying beneath non-navigable waters shall be subject to regulation by the Commission only insofar as such uses may adversely affect the water rights of other persons.

d. Private lands lost by the processes of Nature and acts of God become public property and permission to recover such land rests entirely at the discretion of the Commission.

e. In evaluating applications for the use and/or recovery of subaqueous lands, consideration will be given to sound estuarine conservation practices as well as due regard for the general interest and public welfare of the State.

2.03 The Commission, in considering applications, shall take into account the geology, hydrology and hydraulics of the area of interest, population density and water use, intended use of the proposed project, character of surface and subsoils, water quality, depletion rate of the water resources, sources of contamination, and other factors as may be relevant to the protection of the water resources and public subaqueous lands.

2.04 The Commission may waive any provision of these Regulations when, in its opinion, circumstances justify such action. The failure of the Commission to enforce any of these provisions, however, shall not constitute a waiver by the Commission of any such provisions.

2.05 The conditions of these Regulations shall not be retroactive and any person making a reasonable beneficial use of the

water resources or public subaqueous lands of the State who has not obtained approval for such use prior to the adoption of these Regulations shall have such use protected and regulated in the same manner as any new applicant.

2.06 If any part of these Regulations, or the application of any part thereof, is held invalid or unconstitutional, the application of such part to other persons or circumstances and the remainder of these Regulations shall not be affected thereby and shall be deemed valid and effective.

REGULATIONS

Regulation II. This regulation delineates the minimum requirements governing the location, design, installation, use, modification, and abandonment of water wells and associated pumping equipment.

The regulation in general states that no permit or license is required for a person to personally install, use, repair, modify, or abandon a water well and associated pumping equipment on real estate owned or leased by such person, when the well is to be used by such person or his family for ordinary domestic or agricultural purposes. The work must, however, comply with the provisions of the regulations. All other new or replacement water wells must receive the prior approval of the Commission. Very large wells in certain areas must receive the approval of the Delaware River Basin Commission.

For some wells a geophysical log must be made and a substantial pump test must be conducted or periodic samples collected. All water wells constructed for production purposes must be put to a reasonable beneficial use.

Regulation III. This regulation establishes the Water Well Contractors Advisory Board which has at least five members, one of whom is a member of the Water and Air Resources Commission acting as Chairman of the Board. The Board conducts all examinations for well contractors and consults with the Water Resources Committee of the Commission to discuss and evaluate water resource problems whenever the need for such a meeting exists.

Pursuant to this regulation, all work contracted for on any well in the State can be performed only under the general supervision of a licensed well contractor.

Regulation IV. Under Regulation IV, the Water and Air Resources Commission and the Governor have exclusive jurisdiction to convey a fee simple or lesser interest and to lease or grant permits

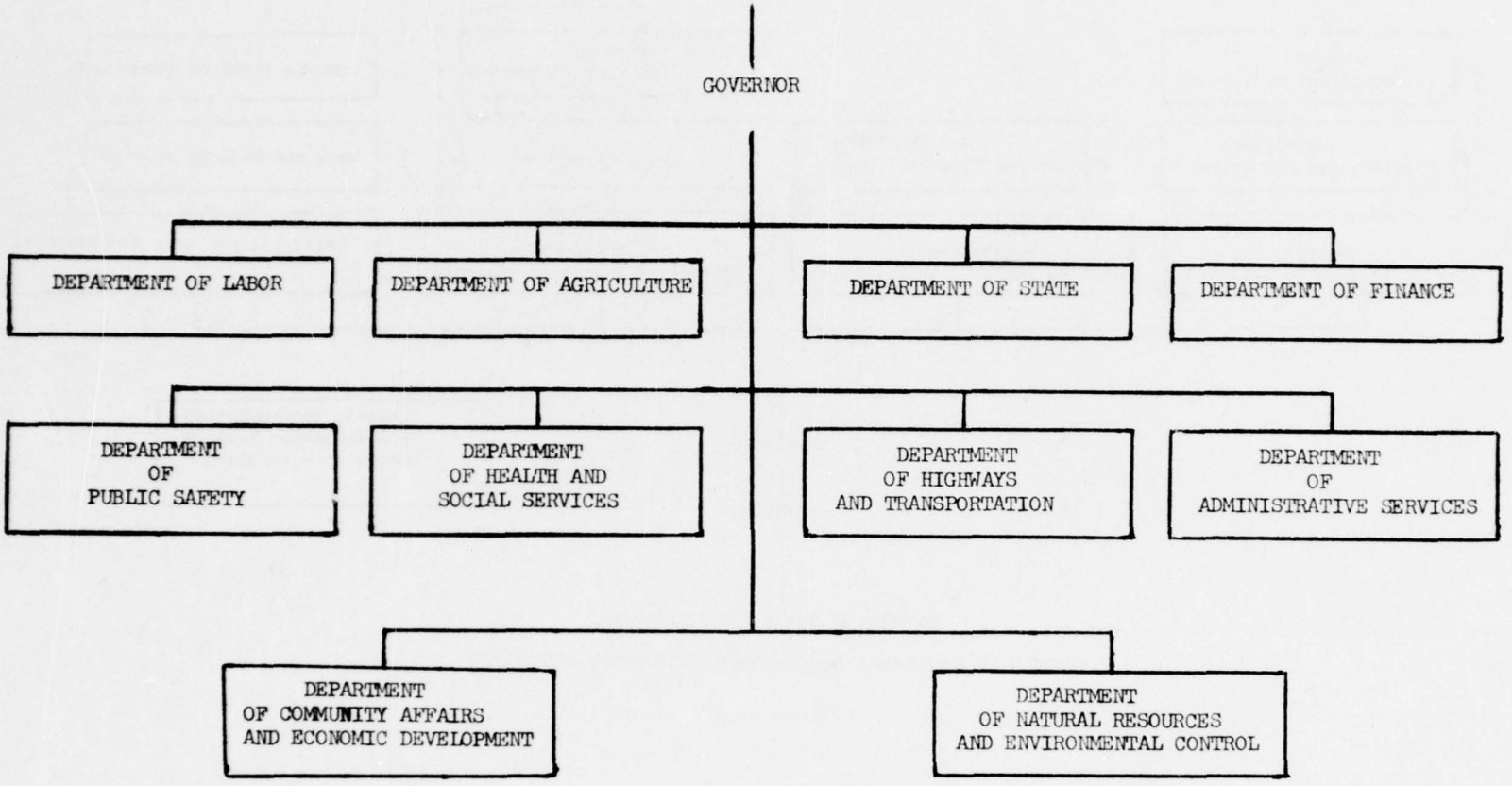
or easements over all public subaqueous lands of the State. This jurisdiction includes all ungranted subaqueous lands in non-navigable waters, and all ungranted tide and submerged lands in navigable and non-navigable waters, whether within or beyond the boundaries of the State, acquired by the State by any legal means. Activities involving private subaqueous lands may also be reviewed by the Commission if they contribute to pollution.

Private lands lost by the process of Nature and acts of God, being covered by water, become lands of the State and permission to recover such lands rests entirely at the discretion of the State. The Commission, in evaluating all applications for the use and/or recovery of subaqueous lands, shall do so in light of its overall policy and its recognition of sound estuarine conservation practices, as well as a due regard for the general interest and welfare of the people of the State.

FIGURE S-1(DEL)

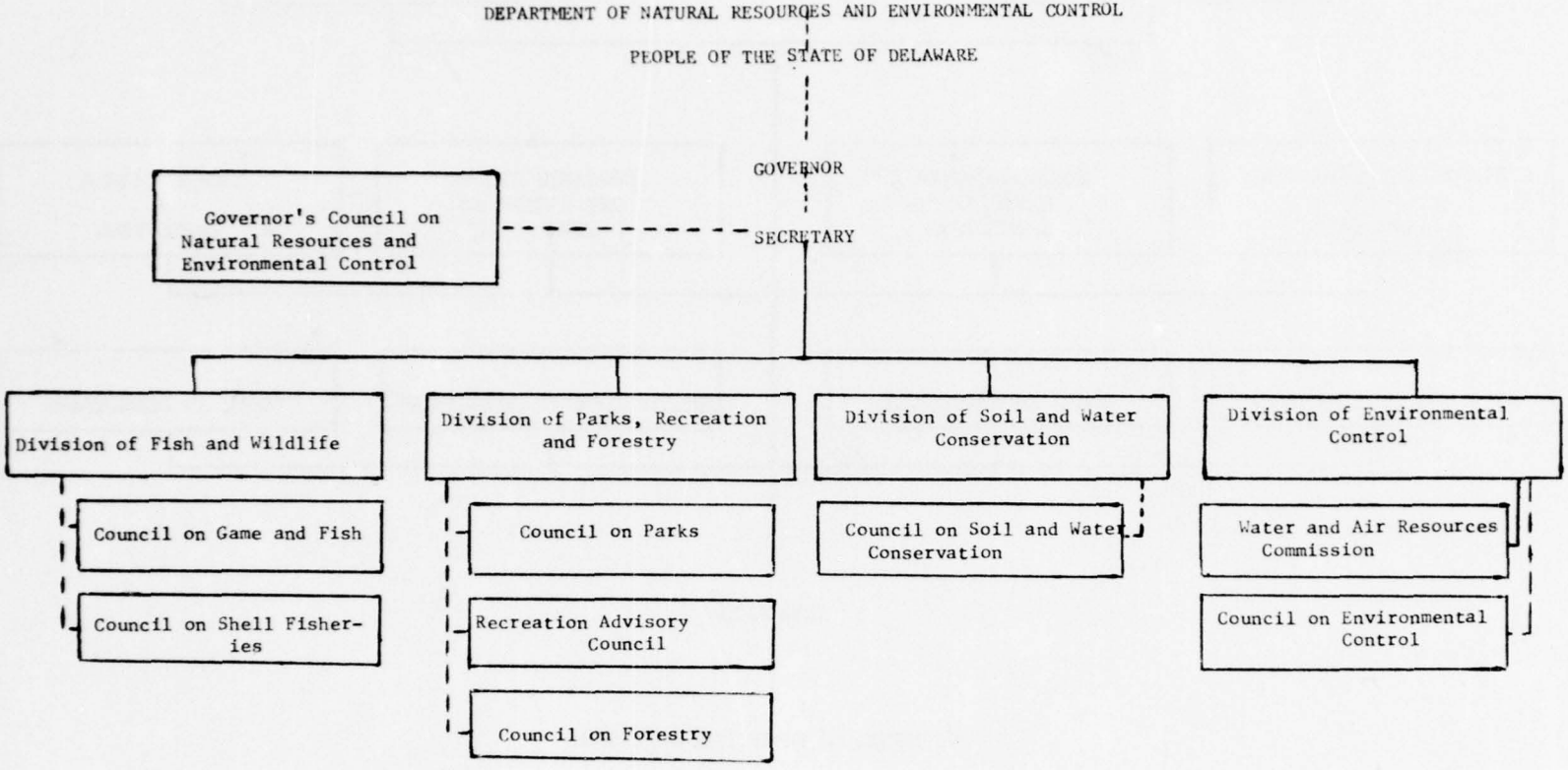
STATE OF DELAWARE

CABINET DEPARTMENTS IN THE EXECUTIVE BRANCH OF GOVERNMENT



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FIGURE S-2(DEL)



STATE OF MARYLAND

Prepared by

State of Maryland
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SYNOPSIS

The State of Maryland has taken steps recently to promote more responsive and efficient management of its natural resources at the State level. New agencies and programs have been created and initiated through both administrative reorganization and legislative action.

The discussion herein on State departments and agencies represents the steps taken by the Governor and the Maryland General Assembly to exercise the State's rights and responsibilities to promote and protect the public interest under police powers concerning health, safety and general welfare. Detailed information is available in the Code of Maryland Laws as well as the rules and regulations of the respective State agencies.

Maryland has also taken steps to join with her neighboring states in both studies and in formally organizing institutional arrangements to improve and coordinate the planning and managing of natural resources such as those represented by the Ohio, Potomac, and Susquehanna River Basins. These matters are discussed under intergovernmental organizations and studies.

There is also a brief discussion on Maryland water rights law and on other agencies and institutions which have bearing on natural resources administration, research, planning and management. These areas (law and other agencies and institutions) comprise another important sector of the total State picture with either direct or indirect bearing on the policies and programs pertaining to Maryland's water and related land resources.

In addition, a selected bibliography at the end of this State report presents a listing of the more significant recently completed studies or special reports pertaining to Maryland's natural resources and policies and issues pertaining thereto.

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STATE OF MARYLAND

I - WATER RIGHTS

The right to use water in Maryland has developed through court decisions as part of the Common Law of the State. This Common Law development recognizes the right of landowners to make use of water that exists beneath the surface of, or runs over or adjacent to their property. These rights to use water are afforded the same constitutional protection as other property rights. They cannot be taken even for a public purpose without due compensation. This right is limited by the equal right of other landowners to use water from the same common supply. The right is also subject to regulation by the State under its police power in the interest of public health, safety, and welfare. When it becomes necessary to acquire water rights for a public purpose, such as for a public water supply, the power of eminent domain can be used in acquiring the needed rights to the use of water.

SURFACE WATER

Diffused Surface Water. This is the water that runs over the surface of the ground after rains and melting snows. It also includes this same water if collected in ponds or lakes before it reaches a surface stream.

A landowner has the right to the natural drainage of diffused surface water from the higher or dominant land to lower or servient land. The lower owner cannot fight the water off his land by backing it up on the higher land above. The upper landowner cannot materially change the nature of the flow from the higher to the lower land by changing the place of entry or by concentrating the flow. This does not mean that the upper landowner cannot change the use of his land. He may make improvements and changes in its use. Whether he becomes liable to the lower or adjoining landowner will depend upon the nature of the improvement to his land and the nature of the damage, if any, resulting to the lower or adjoining land.

When the improvement to land is beneficial to the public, as would be the case in the construction of needed roads, the Court has denied injunctive relief and left the landowner to recover damages for injuries resulting from changes in the flow of surface water over his property. (Kennedy-Chamberlin Development Co. vs. Snure, 212 Md. 369, 129A 2d 142 (1957)).

Injunctive relief has also been denied when desirable improvements to valuable urban property have been involved. In denying injunctive relief, the Court permitted improvement to the property in question and left the adjoining landowners to recover in damages

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for any injury resulting to their property from changes in the flow of surface water. (Sainato vs. Fotter, 222 Md. 263, 159A 2d 632 (1960); Kidwell vs. Bay Shore Development Corp., 232 Md. 577, 194A 2d 809 (1963)).

A landowner may collect diffused surface water flowing over his property and store it in ponds for his use. The lower landowner has no right to this water until it enters his land (93 Corpus Juris Secundum 803). When diffused surface water enters a stream, it becomes water of a watercourse to which different rules apply.

Water Flowing in Surface Streams - Watercourses. Under the doctrine of riparian rights, the owner of land bordering a surface stream is entitled to use water from the stream to benefit his riparian land. "The natural stream existing by the bounty of Providence for the benefit of the land through which it flows is an incident annexed by operation of law to the land itself." (Tyler vs. Wilkinson, 24 Fed. Cases 14,313). His right of use is limited by the equal right of all other riparians to use water from the same stream.

Riparian land must in all cases be land under one common ownership, contiguous to and touching the watercourse and lying within the watershed drained by the stream.

The right of a riparian to make use of the water for domestic purposes is given preference over all other uses. Domestic use has been defined as use for household purposes, watering livestock and chickens, and, in some cases, watering a lawn or small garden. It is generally believed that a riparian may take all the water he needs for domestic purposes.

For all other uses, including irrigation and industrial, each riparian is entitled to make a reasonable use of water from a stream. Whether or not a particular use is reasonable at the time will depend upon a number of factors such as the size and velocity of the stream, the nature of the banks, and the character of the soil. (Baltimore City vs. Appold, 42 Md. 442 (1875)).

In general, each riparian proprietor is entitled to make a reasonable use of the water from a stream for domestic, agricultural, and manufacturing purposes; and what is reasonable with respect to the rights of others must depend upon the circumstances, such as the character and size of the stream and the use to which it can be applied. One use of a stream is to detain and obstruct its flow in order to store water behind dams for use on riparian land (West Arlington Improvement Co. vs. Mt. Hope Retreat, 97 Md. 191, 54A 982 (1903)).

It is a violation of the riparian right for anyone upstream to

discharge untreated sewage and industrial waste into a stream (City of Baltimore vs. Warren Mfg. Co., 59 Md. 96 (1882)).

A municipal corporation has no more right to pollute the waters of a stream to the detriment of riparian owners downstream than a private individual has (Livezey vs. Town of Bel Air, 174 Md. 568, 199A 838 (1938)).

There are two controls over pollution of the waters of the State. (1) The right of riparian landowners to prevent pollution by others as developed through common law--court decisions--described above. Here the individual landowner must take the necessary steps if court action becomes necessary. (2) Control by the State under its police power is the responsibility of the Maryland Department of Water Resources and Department of Health.

When water in a surface stream flows past the land of a riparian owner, that owner's right to use of the water ceases. He, therefore, has no right as a riparian owner to object to any downstream use that is made of the water.

More recent developments of the riparian doctrine in some states permit unlimited use of the water from a stream on either riparian or non-riparian land as long as no downstream riparian owner desires to make beneficial use of his share of the water at the time.

If the water from a spring flows in a definite channel with evidence of a current or direction of flow and is the source of a surface stream or flows into one, then the spring is a part of the stream and the law of surface streams will apply to the use of water from it (Kelly vs. Nagle, 150 Md. 125, 132A 587 (1926)).

On the other hand, if the water from a spring does not flow into a watercourse but wanders over the surface and eventually disappears by soaking into the ground or forms marshes or wet areas from which there is no visible sign of flow, then the waters of the spring would be classified as diffused surface water; and the entire flow could be used by the landowner for any useful purpose (Corpus Juris - Waters - p. 835).

GROUNDWATER

Water Flowing in Underground Streams. The rights incident to streams of water on the surface and those flowing underneath, when the latter flow in well defined channels, are the same (Western Maryland Railway Co. vs. Martin, 110 Md. 554, 73A 267 (1909)).

An underground stream will be protected the same as one on the surface, if it constitutes a stream, the channel or course of

which is known (Washington County Water Co. vs. Samuel B. Garver, 91 Md. 398, 46 A 979 (1900)).

Percolating Underground Water. All the water under the surface of the ground not identified as flowing in well defined channels is percolating ground water. This comprises practically all the undergroun water in Maryland.

Early court cases in both this country and in England gave to the owner of the surface everything that existed in the soil beneath down to the center of the earth. This included the water. The courts reached this decision in those early cases because little was known about the nature and movement of ground water. One landowner could not prove to the satisfaction of the court that the withdrawal of water by another was the cause of his well or spring going dry.

With increased knowledge relative to the presence and movement of ground water, the courts in many states have applied a reasonable use rule in place of the doctrine of absolute ownership in deciding disputes over the use of ground water. Under the rule of these later cases, owners of the surface hold rights in common to the use of underground water. Each is entitled to his share, and one landowner does not have the right to unreasonably interfere with the equal right of another to the use of this water.

No dispute over the use of ground water has been taken to the Court of Appeals in Maryland. However, this Court did have occasion to make the following comment in Western Maryland Ry. Co. vs. Martin, 110 Md. 554, 73A 267 (1909).

> "The decided weight of English and early American authorities supports the doctrine that percolating water was as much part of the land in which it exists as the soil, stones, and minerals therein, and was the absolute property of the owner of the land. The recent American cases show a decided tendency to recede from this early view.....and to so modify that doctrine as may be requisite to do substantial justice between the owners of adjacent lands....."

Land under navigable waters belongs to the State of Maryland unless granted into private ownership prior to 1862. The beds of non-navigable waters belong to and are part of the adjoining land of riparian owners. All navigable waters are subject to the public right of navigation and fishing. The right to fish in non-navigable waters is the exclusive right of adjoining riparian owners (Browne vs. Kennedy, 5 H & J 195 (1821)). The State does have the right to issue licenses and require compensation in order to dredge and fill State wetlands in Board of Public Works v. Lamar, 277 A.2d 427 (Md. 1971).

These are very brief comments relative to the common law development of "water rights" in Maryland. More complete information is contained in Galbreath's Maryland Water Law (1965). This publication was used extensively in the preparation of this section, and such use is hereby acknowledged gratefully. Other significant references on the subject are listed in the selected bibliography of this Maryland report.

II - STATE DEPARTMENTS AND AGENCIES

The need for government reorganization has proven to be a continous one. In the past fifty-five years it has been felt at all levels of government and in all three of its traditional branches. But because of the rapidly multiplying tasks and services that apparently only the executive can perform, by far the greatest amount of attention has been directed toward the field of administrative reorganization.

Major reorganization of the executive branch of State government in Maryland was undertaken commencing in July of 1969. The principal thrust of the reorganization effort has been to centralize diffuse State agencies such as boards, commissions and their programs and activities under cabinet-level departments. Figure 1 shows the structure of the reorganized executive branch of Maryland State government.

The discussion here will focus only on those State departments with major responsibilities or import as far as water and related land resources planning, development and management are concerned. These departments include Natural Resources, State Planning, Economic and Community Development, and Health and Mental Hygiene.

DEPARTMENT OF NATURAL RESOURCES

As part of the overall reorganization of the executive branch of Maryland State government, the Department of Natural Resources was created as a principal administrative agency, effective July 1, 1969. 1/

The head of the Department of Natural Resources is the Secretary of Natural Resources, who is appointed by the Governor with the advice and consent of the Senate. The Secretary serves at the pleasure of the Governor, is directly responsible to the Governor, and is to advise him on all matters assigned to the Department of Natural Resources. The Secretary is responsible for carrying out the Governor's policies in the areas of natural resources research and development, management, and administration.

The legislation which created the Department of Natural Resources abolished the Board of Natural Resources, the former mechanism for coordination of natural resources activities. After

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1/ Article 41 - The Annotated Code of Maryland (1957 Edition, 1969 Cumulative Supplement).

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July 1, 1969, all rights, powers, duties, and functions previously conferred upon the Board or the chairman of the Board of Natural Resources were transferred to the Secretary of Natural Resources. All rules, regulations, orders, and directives promulgated by or in effect for the Board as of June 30, 1969, continue in force unless changed by the Secretary.

It was the intention of the Maryland General Assembly in providing for a Department of Natural Resources, to establish a State agency to review all natural resources policies, plans, programs, and practices of State, county, regional, and Federal agencies and institutions; to coordinate all natural resources activities within the State, and to otherwise unify, coordinate, and promulgate policies, plans, programs, and practices which will insure the management of all natural resources for the greatest benefit of the State and its citizens.

Powers and Duties of the Secretary of Natural Resources. The Secretary of Natural Resources is responsible for:

1. development of coordinated policies for the management of the natural resources of the State;

2. efficient coordination of all the natural resources activities of the State, including the settlement of conflicts that may arise among agencies and institutions within the Department of Natural Resources;

3. coordination and direction of comprehensive planning in the area of natural resources; and

4. keeping himself fully apprised of plans, proposals, projects, and programs of the agencies or units within the jurisdiction of the Department of Natural Resources. He has the power to approve, disapprove, or modify any plan, proposal, project, or program, provided that any such action is not inconsistent with law.

In the discharge of his duties the Secretary shall:

(1) provide a forum of communication among natural resources agencies and a source of information for the Governor and General Assembly on the preservation, development, and use of all natural resources;

(2) study any plans, programs, or activities within the agencies or institutions making up the Department of Natural Resources, and recommend any legislative, budgetary, or administrative changes which will provide more effective administration, clarify responsibilities, terminate obsolete programs, establish

desirable programs, or alter or amend programs to meet changed or changing conditions;

(3) review Federal statutes, policies, programs, and activities which affect or may affect natural resources of Maryland and recommend to Federal, State, and local agencies and institutions procedures for the coordination of these programs;

(4) study the natural resources activities of the subdivisions of the State and recommend procedures for coordination of the natural resources activities of the State and its subdivisions;

(5) maintain an inventory of public land acquired or used for the preservation, development, management, or enjoyment of natural resources; review and approve all plans and proposals of the agencies associated with the Department for the acquisition of additional land for such purposes, taking into account public land owned and managed for identical or similar purposes by Federal agencies, counties, municipalities, and other subdivisions of the State; and

(6) establish and maintain, for the use of the Department of Natural Resources, a natural resources library containing legal, scientific and administrative reports, books, documents, photographs, records, and other information on natural resources.

Board of Review of the Department of Natural Resources. The Board of Review of the Department of Natural Resources consists of seven members appointed by the Governor with the advice of the Secretary and with the advice and consent of the Senate. Of the seven members, not less than four are to be selected from and represent the general public. The remaining members are to be persons of knowledge and experience in one or more fields under the jurisdiction of the Department of Natural Resources. The Governor designates a chairman from among the members representing the general public.

The Board may make recommendations to the Secretary regarding the operation and administration of the Department of Natural Resources. The Board hears and determines appeals on those decisions of the Secretary or any agencies within the Department of Natural Resources which are subject to judicial review under the law. The Board also hears and determines appeals from those actions or failure to act by any agencies within the Department for which the Secretary, by regulations, provides for review by the Board.

Agencies of the Department of Natural Resources. As a result of the creation of the Department of Natural Resources five major agencies and 18 ancillary agencies, boards, and commissions were

consolidated within a single organization. The major agencies concerned were:

(1) The Department of Water Resources
(2) The Department of Game and Inland Fish
(3) The Department of Forests and Parks
(4) The Department of Chesapeake Bay Affairs
(5) The Maryland Geological Survey

In 1970, another major agency, the Maryland Environmental Service, was added to the Department of Natural Resources.

The following departments, agencies, commissions, boards, and committees were included within the Department of Natural Resources: the Department of Chesapeake Bay Affairs, the Commission on Chesapeake Bay Affairs, the Department of Game and Inland Fish, the Game and Inland Fish Commission, the Department of Forests and Parks, the Commission of Forests and Parks, the Maryland Geological Survey, the Maryland Geological Survey Commission, the Bureau of Mines, the Mine Examining Board, the Maryland Commission on Mining Laws, the Land Reclamation Advisory Committee, the Department of Water Resources, the Water Resources Commission, the Maryland membership unit of the Interstate Oil Compact Commission, the Upper Potomac River Commission, the Governor's Pautuxent River Watershed Advisory Committee, the Maryland Environmental Trust, the Maryland membership unit of the Interstate Commission on the Potomac River Basin, the Maryland membership unit of the Interstate Advisory Committee on the Susquehanna River Basin, the Maryland membership unit of the Atlantic State Marine Fisheries Commission, the Maryland membership unit of the Potomac River Basin Advisory Committee, the Maryland membership unit of the Potomac River Fisheries Commission, the Scenic River Review Board, the Water Sciences Advisory Board, and such other departments, agencies, commissions, boards, committees, councils or units as may hereafter by law be declared to be part of the Department of Natural Resources.

Figure 2 presents the administrative organization of the Department of Natural Resources. Several nomenclatural confusions remain, subject to recodification of all Maryland natural resources laws (scheduled for 1972). For example, three agencies within the Department of Natural Resources (Water Resources, Chesapeake Bay Affairs, and Forests and Parks) are also designated as "departments". The other administrative agencies within the Department are: The Maryland Geological Survey, the Maryland Environmental Service, and the Fish and Wildlife Administration. (The former Department of Game and Inland Fish was redesignated the Fish and Wildlife Administration by administrative order during 1970.)

Before the creation of the Department of Natural Resources,

each of the major agencies was headed by a commission which held policy-making and rule and regulation promulgating powers. With the creation of the department, these commissions were reduced to an advisory capacity and their previous powers were vested in their respective operating agency Directors. This provided for a direct line of responsibility and accountability from the Governor through the Secretary of Natural Resources to the Directors of the operating management agencies. All departments, commissions, boards, and other agencies of the Department of Natural Resources are to report to the Secretary of Natural Resources as provided in regulations promulgated by the Secretary.

(1) Department of Water Resources. 1/ It was the intention of the General Assembly in establishing the Department of Water Resources to exercise to the fullest extent possible the responsibilities of the State of Maryland for the planning, development, and management of the State's water resources.

The Director of the Department is appointed by the Governor upon the recommendation of the Secretary of Natural Resources. He shall be responsible for the exercise of all the powers and duties conferred upon the Department of the provisions of Article 96A.

The powers and duties of the Department include:

1. Planning for Multiple-Purpose Development - The Department shall prepare and develop a general water resources program which contemplates the proper development and management of the waters of the State on a multiple-purpose basis to serve as a guide to the Department in the performance of its duties.

2. Surveys, Mapping - The Department is authorized to make such surveys, maps, investigations and studies of the water resources of the State as may be necessary for the conduct of its duties.

3. Appropriation and Use of Water - The Department is authorized to control, through the issuance of permits, the appropriation and use of the surface and underground water of the State. Excluded from this regulation is the use of water for domestic and farming purposes and the use of water for an approved water supply of any municipality if the use was in effect on July 1, 1969. Article 96A provides for the filing of applications, giving notice of, and conducting public hearings on applications for the appropriation or use of water and for the construction and repair of dams, reservoirs and waterway obstructions.

1/ Article 96A - 1957 Code of Maryland Laws - 1964 Replacement Volume (1970 Supplement).

4. Construction, Reconstruction, and Repair of Dams, Reservoirs, or Waterway Obstructions - Through the issuance of permits, the Department exercises control and supervision over the construction, reconstruction, and repair of dams, reservoirs, and all other waterworks in any of the waters of the State.

Exempt from this regulatory authority are the following:

a. dams or obstructions less than ten feet in height above the elevation of the stream bed or waterway;

b. reservoirs with a storage capacity of less than one million gallons;

c. reservoirs designed, constructed, and operated as waste stabilization lagoons under permit from the State Department of Health;

d. dams for the impounding of water less than four feet in depth over tidal and non-tidal swamp lands for the propagation of muskrats and other wildlife species;

e. farm ponds with drainage area above the structure not exceeding 150 acres, surface area not exceeding five acres and depth not exceeding nine feet above the original stream bed;

f. dug out ponds - those constructed entirely by excavation below existing ground level - are excluded from the above requirements;

g. other ponds constructed as farm ponds with a drainage area above the structure not exceeding 400 acres in the Piedmont and mountain areas of the State and 700 acres in the Coastal Plain areas, and not exceeding 12 acres in surface area and 15 feet in depth measured from the original stream bed.

5. Cost share in Watershed Protection and Flood Prevention Act (P.L. 83-566) Projects - The Department administers such financial assistance as may be made available by the State to contribute up to fifty percent of the non-Federal share of approved P.L. 83-566 projects.

6. Permits for Conduits, Pipes, etc. Pertaining to the Potomac - A permit from the Department is required to construct, reconstruct, change, or make any addition to any conduit, pipeline, wire cable, trestle, or other device, structure or apparatus, in, under, through, or over the bed or waters of the Potomac River.

7. Flood Prevention - The Department is authorized to develop

and carry out long-range programs for flood control in cooperation with the Federal government; to assist local governments and other State agencies in drafting local land use and other regulations pertaining to areas subject to flooding; and to administer such financial assistance for flood control as may be made available.

8. Well Drilling - The Department regulates well drilling through the licensing of well drillers, and issuance of permits to drill wells. Upon completion of the drilling of any well, the driller is required to file with the Department a log of each well and other information. Owners are required to seal abandoned wells and are prohibited from allowing the water of a pumping or flowing well to run to waste.

9. Pollution Control - The major responsibilities of the Department with respect to pollution 1/ are the following:

a. encourage voluntary cooperation by individuals, industries, municipalities, countries, and other public bodies in restoring, preserving, and maintaining the purity of the waters of the State;

b. coordinate and stimulate the activities of the several State agencies concerned with water quality;

c. enforce existing laws relating to the abatement of pollution of the waters of the State;

d. supplement existing technical data through studies, investigations, surveys;

e. cooperate with other State agencies engaged in accumulating and developing additional data and information;

f. cooperate with other State agencies in enforcing water pollution control laws and regulations;

1/ Pollution as defined by Maryland statute means the discharge or deposit into the waters of the State any liquid, gaseous, or solid substance or substances which may create a nuisance therein or render such water unclean or noxious as to be detrimental to the propagation, cultivation, or conservation of animals, fish, or aquatic life, or unsuitable with reasonable treatment for use as present or possible future sources of public water supply or unsuitable for commercial, industrial, agricultural, recreational, or other reasonable uses. The term also includes the discharge or deposit of any substance which, because of its temperature, is detrimental to or unsuitable for any of the above described uses of waters of the State (Sec. 2(g) - Article 96A).

g. recommend standards for sewage or waste effluents discharged into the waters of the State;

h. receive complaints, make investigations and take appropriate action regarding pollution incidents;

i. conduct hearings as may be necessary in the discharge of the Department's pollution abatement responsibilities;

j. issue special order directing polluters to take remedial action within a specified period of time; in the event of failure to comply, the Department shall direct such polluters to build or install such designed system, treatment plant structures, devices or other means as are practicable and use of the injunctive powers when called for;

k. develop and implement a program to abate pollution from abandoned mine drainage;

l. implement the State's responsibilities under the Statewide sediment control program;

m. cooperate with other State agencies to prevent the discharge of oil from vessels into the waters of the State;

n. establish water-quality standards for the waters of the State;

o. cooperate with responsible authorities of other states and the Federal government concerning policies, procedures, and means to control, regulate, or correct the pollution of interstate waters and recommend the carrying out of such procedures to the proper State agencies;

p. receive, administer, and expend such Federal funds as are available for pollution control; and

q. recommend legislative or administrative actions as may be deemed necessary and desirable to better control the pollution of the waters of the State.

Both the Department of Water Resources and the Department of Health and Mental Hygiene have statutory responsibilities for water pollution abatement and control. The Department of Water Resources has primary responsibility with respect to water pollution resulting from the discharge of industrial wastes while the Department of Health has primary responsibility with respect to water pollution from untreated or inadequately treated sewage.

(2) Maryland Environmental Service. 1/ Created in 1970, the Maryland Environmental Service represents a new approach to the problem of environmental pollution. It is a product of the realization that all levels of government share responsibility for the existence of the problem and must, therefore, assist each other in seeking its solution. The Maryland Environmental Service was created in order that the State of Maryland might effectively aid local jurisdictions and industries by assisting them in providing liquid and solid waste treatment, disposal, and reclamation facilities.

The agency is authorized to provide both liquid and solid waste transportation, treatment and disposal services on a wholesale basis to Maryland's local governments and industries. The Maryland Environmental Service operates as a public utility. As such it has all the powers necessary to conduct business as a public corporation and to plan, design, finance, construct, operate and maintain liquid and solid waste treatment and disposal facilities.

The Service is administered by a Director who is responsible for the exercise of all powers and duties conferred upon the agency by the provisions of the enabling legislation, including the undertaking of any or all of the actions required to provide liquid or solid waste facilities; the development, in consultation with affected local governments, of implementation plans for the management of liquid and solid waste; engagement of consultants and contractors; the execution of contracts with governmental units or industry to assist in providing new or improved waste handling and treatment facilities or to assist in the operation and maintenance of existing facilities; the carrying out of directives of the Secretary of Health and Mental Hygiene and the Secretary of Natural Resources to abate pollution when State orders have not resulted in compliance; and the utilization of State and Federal grant funds to defray the cost of facility construction. The Maryland Environmental Service Board of Directors may sell bonds to finance waste disposal and reclamation facilities such as sewage treatment plants, incinerators, sanitary landfills and reclamation receiving centers.

The Maryland Environmental Service will utilize a modified commercial principle through user pricing of its production and distribution of liquid and solid waste treatment and disposal services. The principle would be modified to the extent that the "customer" in most instances would be a political jurisdiction rather than an

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1/ Article 33B - 1957 Code of Maryland Laws - 1971 Replacement Volume.

individual or private purchaser. An important aspect of the Maryland Environmental Service concept is that a local subdivision will remain responsible for waste collection from individual residences within its jurisdiction. The Service will be responsibile only for interceptor sewers, transfer stations, and for treatment and disposal facilities. The local jurisdiction will be responsible for levying individual charges and collecting revenues to reimburse the Service for facilities provided.

(3) Maryland Geological Survey. 1/ Formerly known as the Department of Geology, Mines and Water Resources, the Maryland Geological Survey is now a department within the Department of Natural Resources. There is also a Commission consisting of five members appointed by the Secretary of Natural Resources which serves in an advisory capacity to the Director of the Survey. The Director of the Survey is appointed by the Governor upon the recommendation of the Secretary of Natural Resources.

The Director exercises all the powers and duties conferred upon the Survey by law subject to the authority of the Secretary of Natural Resources. Specifically, the Director exercises general supervision over all matters pertaining to:

1. conducting topographic, geologic, hydrographic, and geophysical surveys;

2. preparing topographic, geologic, and other types of maps to meet specific needs;

3. preparing reports on the extent and character of the State's geology, minerals, and water resources;

4. the Bureau of Mines, as set forth in Sections 487 through 674 of Article 66C;

5. the Division of Archaeology, as set forth in Sections 110B through 110K of Article 66C; and

6. investigating and recommending plans and policies for the protection of the waterfront of the State against erosion and deposition and cooperating in carrying out plans for the development of the waterfront property of the State. 2/

1/ Sections 15-17, Article 66C - 1957 Code of Maryland Laws - 1970 Replacement Volume.

2/ The Survey conducts research on shore erosion problems of Chesapeake Bay. The Department of Chesapeake Bay Affairs has the responsibility for implementing protection measures.

(4) Bureau of Mines. 1/ The Bureau of Mines operates under the Maryland Geological Survey. The Director of the Bureau is appointed by the Governor with the advice of the Secretary of Natural Resources. The Bureau exercises regulatory authority over strip and underground mining of coal for the health and safety of persons, and the protection and conservation of property connected with coal mining in Maryland.

(5) Department of Chesapeake Bay Affairs. 2/ It was the intention of the General Assembly in the establishment of the Department of Chesapeake Bay Affairs that the planning, development, management, and conservation of the Chesapeake Bay and all other tidal waters and the shorelines and bottoms thereof are the responsibility of the State of Maryland.

The Director of the Department is appointed by the Governor upon the recommendation of the Secretary of Natural Resources. The powers and duties of the Department are as follows:

1. Plan for the development and management of the Chesapeake Bay and all other tidal waters, including the shorelines and bottoms of all associated resources excluding any matters under the jurisdiction of other State agencies;

2. cooperate with other agencies in the protection of the State's tidal waterfront and waterways against erosion and deposition;

3. conduct demonstrations of extended duration as may be necessary for carrying out its duties;

4. further development of navigational aids and improvement of the Bay's waterways and other tidal waters of the State;

5. exercise general supervisory power, regulation, and control of the natural resources found within the boundaries of the State's tidal waters;

6. contract for research or scientific investigations with appropriate research organizations;

7. use any funds available to the Department from the Federal government or other sources for the rehabilitation of the seafood industry,

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1/ Section 487, Article 66C - 1957 Code Of Maryland Laws - 1970 Replacement Volume. Bureau activities are covered by Sections 486-656.

2/ Article 66C, 1957 Code of Maryland Laws (1970 Replacement Volume).

8. regulate the removal of sand, gravel, and other resources from public lands under the waters of the Chesapeake Bay; and

9. implement the wetlands laws of the State.

The responsibilities of the Department regarding shore erosion control are as follows:

1. develop and implement a public educational program on the causes, effects, and locations of shore erosion and the steps necessary for its control;

2. provide technical assistance to individual property owners, municipalities, and counties having specific shore erosion problems;

3. review petitions for creation of shore erosion control districts;

4. design shore erosion control structures and vegetative control methods for shore erosion control districts;

5. enter into agreements with persons, municipalities, or counties for construction of shore erosion control structures;

6. supervise or secure supervision of the construction of erosion control devices; and

7. secure the funds necessary to pay the State's share of any shore erosion control devices.

The Department of Chesapeake Bay Affairs shares administrative responsibilities for the State Boat Act 1/ with the Fish and Wildlife Administration. These agencies encourage the development, use, and enjoyment of all waters of Maryland for boating in cooperation with neighboring states and the Federal government. The Department's responsibilities in this area are as follows:

1. prepare plans for the improvement and promotion of Maryland's water for recreational purposes;

2. promote boating safety through an educational program directed to boat owners and operators;

3. plan a regulatory program in cooperation with other states, the Federal government, and with local agencies; and

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1/ Article 14B - 1957 Code of Maryland Laws - 1968 Replacement Volume (1970 Supplement).

4. improve the waterways of Maryland.

Several programs designed to implement the provisions of the Department's statutory authority are financed through the State boat tax. These include the dredging of small boat channels, debris removal, including old pilings, and elimination and control of aquatic plants such as water chestnut, milfoil, and sea lettuce.

(6) Fish and Wildlife Administration. 1/ It was the intention of the General Assembly in the establishment of the Fish and Wildlife Administration (formerly the Department of Game and Inland Fish) to provide for the enforcement of game and fish laws and regulations, and habitat improvement on private and public lands for the purpose of increasing and maintaining wildlife and fish populations.

The Director is appointed by the Governor upon the recommendation of the Secretary of Natural Resources. He shall be responsible for the exercise of all the powers and duties conferred upon the Administration.

The powers and duties of the Administration include:

1. controlling, hunting, capturing, killing, possessing, selling, purchasing, shipping, transporting, or exporting of any wild bird, animal, or fish;

2. issuing hunting, fishing, and other licenses that are required;

3. erecting and maintaining fish hatcheries, ponds, and rearing stations for supplying fish;

4. cooperating with other State and Federal agencies in studying current tidewater environmental problems affecting wildlife;

5. cooperating with landowners and State and Federal agencies in developing water resources for suitable wildlife habitat;

6. developing water resources on Department-owned lands for use of wildlife;

7. seeding and planting banks of drainage projects with food and cover plants for wildlife and for erosion control and maintaining constant surveillance over water pollution and streamflow and their effects on fish and wildlife.

8. negotiating with other states regarding catching of crabs, size of fish, and opening and closing of seasons;

9. cooperating with counties or political subdivision of counties providing funds for purchasing and planting shells and purchasing and transplanting seed oysters;

10. importing shellfish or other organisms for experimental purposes; and,

11. establishing a quarantine where necessary and advisable to prevent the importation or spread of diseases or conditions detrimental to shellfish.

(7) Department of Forests and Parks. 1/ It was the intention of the General Assembly in the establishment of the Department of Forests and Parks to exercise to the fullest extent possible the responsibilities of the State of Maryland in the encouragement of economic development and use of its natural resources for the improvement of the local economy, preservation of natural beauty, and promotion of the State's recreational interests. The Department is to do this by promoting, administering and managing all State-owned or leased forests, parks, scenic preserves, natural areas, parkways, historic monuments, and recreation areas.

It is the Director's responsibility to exercise all powers, functions and duties pertaining thereto. The Director is appointed by the Governor upon the recommendation of the Secretary of Natural Resources.

The powers and duties of the Department include:

1. promote good forest management practices on both public and private woodlands of the State and provide the necessary technical assistance to insure protection against erosion, siltation and flooding;

2. secure high-quality water for recreational purposes and domestic use within park areas, provide adequate sanitary facilities in recreational areas maintained by the State, and cooperate with other State agencies, counties, towns, corporations, and individuals in preparing plans for park and recreational area acquisition and development;

3. operate a nursery from which seedlings are supplied free to landowners for conservation purposes, including erosion control; and

4. acquire and manage lands for watershed protection.

1/ Sections 343-411 1/2, Article 66C - 1957 Code of Maryland Laws - 1970 Replacement Volume.

DEPARTMENT OF STATE PLANNING 1/

It was the intention of the General Assembly in creating the Department of State Planning that it would function as the Governor's staff agency in planning matters and that the Department prepare, recommend and continually provide an integrated program for the development and effective employment of the natural and other resources of the State. The Secretary, as the chief executive officer of the Department, is responsible for carrying out Departmental responsibilities. He is appointed by and serves at the pleasure of the Governor.

The Planning Commission consists of seven members who are appointed by the Secretary. The Commission serves in an advisory capacity to the Secretary. The Table of Organization (Figure 3) shows the major functional divisions within the Department.

The powers and duties of the Department as pertaining to water and related land resources are as follows:

1. prepare and from time to time, revise or amend a plan or plans for development of the State;

2. act as the Governor's principal staff agency in planning matters concerning the resources and development of the State;

3. prepare the State's capital improvement program and the annual capital budget as well as study proposed capital projects;

4. prepare and from time to time revise inventory listings of the State's natural resources;

5. cooperate with and provide assistance to the Maryland General Assembly, local, State, and Federal governments and agencies, educational institutions, and research organizations in research, planning, and special studies; and

6. coordinate the plans and programs of Federal, State and local governments.

DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT 2/

It was the intention of the General Assembly in the establishment of the Department of Economic and Community Development to: advance the economic welfare of the people through programs and

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1/ Article 88C - 1957 Code of Maryland Laws - 1969 Replacement Volume.

2/ Chapter 527 (H.B. 1090), Laws of Maryland 1970, Volume I.

activities; develop in a proper manner the State's natural resources and economic opportunities; promote and encourage the location of new industries and businesses in the State; and to encourage the expansion of existing industries and other matters intended to foster and develop gainful employment for the residents of Maryland.

The Secretary of the Department is appointed by the Governor.

The principal powers and duties of the Department are:

1. initiate and maintain contact with business and industrial prospects and inform them about all Maryland locations which might meet their requirements;

2. assemble, classify, and analyze all existing data pertaining to the State's economic resources and problems;

3. review and report on economic trends within the State;

4. encourage formation of local and sectional development committees, and cooperate with local civic groups, and other local, State, and Federal development agencies;

5. foster and promote Maryland's tourism industry by advertising and publicizing the State's historic, scenic, and recreational attractions;

6. coordinate State-level activities under the Appalachian Regional Development Act of 1965, as amended in 1967-69 and 1971;

7. coordinate State-level activities under the Public Works and Economic Development Act of 1965, as amended in 1971; and

8. provide regional liaison for the Tri-County Council for Southern Maryland, and liaison and certain administrative services for the Delmarva Advisory Council.

DEPARTMENT OF HEALTH AND MENTAL HYGIENE 1/

The Department of Health and Mental Hygiene exercises

1/ Article 43 - 1957 Code of Maryland Laws - 1965 Replacement Volume (1970 Supplement). Reorganization of the State Department of Health and Mental Hygiene has changed the Bureau of Environmental Hygiene to the Environmental Health Administration under the Assistant Commissioner for Environmental Health Services.

responsibility for the general supervision and control over the sanitary condition of the waters of the State as related to public health. This responsibility is carried out by the Department's Environmental Health Administration.

The powers and duties of the Department are as follows:

1. supervise and control the waters of the State, insofar as their sanitary and physical condition affect the public health or comfort;

2. promulgate and enforce rules and regulations, and order works to be executed to correct and prevent the pollution of the waters of the State;

3. investigate all sources of potable water and ice supply and all points of sewage discharge;

4. examine all existing public water supplies, sewage systems, and refuse disposal plants, with power to compel their operation in a manner which shall protect the public health and comfort, and order their alteration, extension, or replacement by other structures when deemed necessary;

5. pass upon the design and construction of all public water supplies, sewerage systems, and refuse disposal plants which shall be built within the State;

6. govern the individual water supply and sewage disposal systems for homes and other establishments in the counties of Maryland where public water supply and sewerage systems are not available;

7. develop a comprehensive and coordinated statewide program for the collection and disposal of solid waste materials;

8. promote the construction of water, sewerage, and solid wastes facilities with the use of Federal and State funds;

9. consult with and advise county and municipal authorities and others on water supply and waste disposal problems;

10. administer the legislative requirement that the governing body of each county be responsible for the preparation of plans for public water supplies and sewerage systems throughout the county;

11. encourage basin-wide plans leading to the integration of communities to be served by single treatment facilities where possible;

12. assist counties and municipalities in developing comprehensive master plans for the construction of basic main facilities for the distribution of water and the collection of sewage and industrial wastes,

13. review and approve subdivision plans as related to the provisions of water supply and sanitary waste disposal;

14. after investigation, issue orders requiring the correction of any water supply or sewerage system or operations detrimental to the public health;

15. conduct shoreline surveys in connection with shellfish waters;

16. govern the sanitary control of the growing, harvesting, handling, processing, packing, and shipping of shellfish;

17. monitor streams for pesticides, and

18. contract for research or scientific investigations with appropriate research organizations.

In addition to the foregoing, regulatory authority is exercised over public health standards at public beaches and public swimming pools.

III - INTERGOVERNMENTAL ORGANIZATIONS AND STUDIES

INTERSTATE ADVISORY COMMITTEE ON THE SUSQUEHANNA RIVER BASIN

The Interstate Advisory Committee on the Susquehanna River Basin was established to coordinate the interests of the several jurisdictions in all matters pertaining to the planning, development, and management of the water and related land resources of the basin.

The Advisory Committee is comprised of four members each from Maryland, Pennsylvania, and New York, two of whom are designated from the State legislature and two from the executive branch, one to be an appropriate administrative official and the other a designee of the Governor.

Consulting members to the subcommittees may include State, local, and Federal officials and representatives of civic and other organizations concerned with the development of the basin. Federal cooperation through the appropriate agencies is desired to the fullest possible extent.

The duties of the Committee are:

a. promoting, coordinating, cooperating, and where necessary undertaking studies of the basin and its problems;

b. assisting in the formulation and implementation of plans for the development and proper management and use of the water and related resources of the Susquehanna River Basin;

c. coordinating the activities of the appropriate State and Federal agencies in planning and implementation including (but not limited to) the abatement of pollution, flood control and zoning, the general use and control of the waters of the basin, the development of recreational areas, the encouragement of agricultural and economic development in appropriate areas and the conservation and wise utilization of the forests and other natural resources of the basin;

d. encouraging appropriate policies in the three States and the enactment of State laws for their effectuation; and

e. studying and recommending legislation for the creation of a permanent intergovernmental agency for the proper management and effective utilization of the resources of the Susquehanna River Basin.

SUSQUEHANNA RIVER BASIN COMPACT

The work of the Interstate Advisory Committee on the Susquehanna River Basin with regard to desired institutional arrangements came to complete fruition with passage of the Susquehanna River Basin Compact (P. L. 91-575) by the U. S. Congress on December 24, 1970. Membership of the Commission created by that Act includes the States of Maryland and New York, the Commonwealth of Pennsylvania, and the United States of America.

Purposes and responsibilities of the newly created Compact Commission include:

a. insure coordinated, comprehensive planning for the conservation and development of water and related land resources on a Basinwide basis by Federal, state, interstate and local agencies and private non-governmental groups;

b. develop and adopt a comprehensive plan and program for the immediate and long-range development and use of the water resources of the Basin;

c. provide a single administrative agency essential for effective and economical direction, supervision and coordination of all efforts and programs concerning Basin water and land resources because of their functionally interrelated nature and because the uses of these resources are interdependent;

d. engage in the construction, operation and maintenance of a project when necessary to the execution of the comprehensive plan and when no other competent agency is in a position to act; and

e. promote interstate comity, remove causes of possible controversy, make secure development within states, apply the principle of equal and uniform treatment of all users of water and of water related facilities without regard to political boundaries.

Governor Marvin Mandel is the Maryland Commissioner, and he has designated Mr. James B. Coulter, Secretary, Department of Natural Resources, as his alternate. Mr. Vladimir Wahbe, Secretary, Department of State Planning, and Dr. Albert R. Miller, Jr., Director, Development Planning and Research Programs, Department of State Planning, have been officially designated as advisors to the Commissioner.

SUSQUEHANNA RIVER BASIN STUDY

In 1961, a comprehensive study of the water and related land resources of the Susquehanna River Basin was authorized by Congress.

Because many Federal and state agencies would be involved in the study, a Coordinating Committee was established with the Corps of Engineers serving as the chairman agency.

Membership of the Committee consisted of representatives from three basin states - New York, Pennsylvania and Maryland - and seven Federal agencies with authorized interests or programs pertaining to natural resources in the Susquehanna River Basin. The Department of State Planning served originally as the Maryland representative. This responsibility was shared in the later stages of the study with the Department of Water Resources.

The study initiated by the Coordinating Committee in 1963 was completed during Fiscal Year 1970. The study report (19 volumes) has been submitted for final review to Federal agencies, basin states, and the Water Resources Council prior to its transmittal to the President and the U. S. Congress.

The existence of the Susquehanna River Basin Compact Commission (discussed earlier) will have significant bearing on the future implementation of the plan produced by the Coordinating Committee. The Committee's report should not be confused with the comprehensive water resources plan and program required by the recently enacted Compact. While the completed study and plan will provide useful information to the Commission, the Commission is free to accept or reject it or any part thereof.

INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN 1/

Congress authorized Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia to enter into a compact providing for the creation of a conservancy district to consist of the drainage basin of the Potomac River for the purpose of regulating, controlling, and preventing the pollution of the waters of the Potomac drainage area by sewage and industrial and other wastes.

The Commission consists of three representatives from each state and three members appointed by the President. The Governor and two members named by the Governor, who are residents in the Potomac River Drainage Basin, represent the State of Maryland on the Commission. In addition to the three representatives from Maryland serving on the Commission, other citizens of the State serve on various committees appointed by the Commission.

Major powers of the Commission are as follows:

1/ Section 407, Article 43 - 1957 Code of Maryland Laws - 1966 Replacement Volume. Note: An amended Compact was approved by President Nixon on September 25, 1970.

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NORTH ATLANTIC REGIONAL WATER RESOURCES STUDY. APPENDIX S. LEGA--ETC(U)
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a. collecting data, conducting research, and preparing reports on the character, pollution, and condition of streams in the basin;

b. cooperating with the legislative and administrative agencies of the signatory parties, commissions, and other organizations for the purpose of promoting uniform laws, rules, and regulations for the abatement and control of pollution;

c. disseminating information to the public regarding stream pollution problems;

d. cooperating with other organizations engaged in fact-finding and research activities on the treatment of sewage and industrial wastes; and

e. making, revising, and recommending to the states reasonable minimum standards for the treatment of sewage and industrial wastes discharged, or to be discharged into the streams of the basin.

POTOMAC RIVER FISHERIES COMMISSION 1/

Maryland and Virginia recognize the importance of the Potomac River fisheries. In order to assist in the maintenance of this resource, these States entered into an agreement to establish a Potomac River Fisheries Commission.

The Commission consists of six members, three from Maryland and three from Virginia. The Chairmanship of the Commission alternates from year to year between the states' representatives.

The powers and duties of the Commission are as follows:

a. making a survey of the oyster bars and undertaking any reseeding and replanting that may be necessary;

b. prescribing the type, size, and description of all species of finfish, crabs, oysters, clams, and other shellfish taken or caught and the places and manner in which they are caught;

c. maintaining a research program;

d. issuing the required licenses;

1/ Section 261A, Article 66C - 1957 Code of Maryland Laws - 1970 Replacement Volume.

e. imposing an inspection tax not exceeding 25¢ per bushel upon all oysters caught within the limits of the Potomac River; and

f. making rules and regulations necessary and desirable for authorizing and regulating the dredging of soft shell clams and levying license fees for such dredging.

POTOMAC RIVER BASIN ADVISORY COMMITTEE

The Potomac River Basin Advisory Committee was established to coordinate the interest of the several basin jurisdictions on all significant matters pertaining to the water and related land resources of the Potomac Basin, to bring to the attention of responsible Federal agencies the general concern and interest of the states and the District of Columbia in these matters, and to advise heads of government on the best possible kind of permanent interstate organization for the planning and development of the resources of the Basin.

The Advisory Committee consists of three representatives each from Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia, appointed by the respective Governors and by the Mayor of the District of Columbia.

The Chairman of the Advisory Committee may, upon the recommendation of the states' representatives appoint members to such subcommittees as the parent committee may create. Consulting members may include State, local, Federal, and interstate officials; representatives of civic or other organizations concerned with the development of the basin; and other individuals having special knowledge or competence in matters of concern to the Committee.

The duties of the Committee include:

a. assist in the formulation and implementation of plans for the development, management, and use of the water and related resources of the Potomac River Basin;

b. seek and coordinate the views of the several basin jurisdictions, political subdivisions, industries, organizations, and the general public on all significant matters pertaining to the Potomac River;

c. consider these views with representatives of the Departments of the Interior and the Army and with such other Federal and State agencies and officials as the Committee may deem appropriate;

d. inform the Governors and the Board of Commissioners of the results of the Committee's activities under b and c above, together

with the recommendations of the Committee in relation thereto; and

e. determine and advise the respective Governors and the Board of Commissioners concerning the best possible kind of permanent interstate organization for the planning, development, and administration of the waters and related land resources of the Potomac River Basin.

POTOMAC RIVER BASIN COMPACT

The work of the Potomac River Basin Advisory Committee has moved beyond the deterministic stage with regard to interstate institutional arrangements for planning the development and administration of the water and related land resources of the Basin. Compact legislation was enacted by the 1970 session of the Virginia Legislature and during the 1971 Maryland legislative session. West Virginia and Pennsylvania legislatures have not yet taken any action on Compact legislation. Therefore, establishment of a Federal-State river basin compact for the Potomac is a few years removed from possible realization.

OHIO RIVER BASIN COMPREHENSIVE SURVEY

The Corps of Engineers has completed a comprehensive investigation of water and related land resources development needs in the Ohio River Basin. The basic objective of the Survey was the formulation of a framework plan for development to serve as a guide on how to meet foreseeable short and long-term needs in the basin.

Coordination of the Survey was formalized in 1962-63 with the establishment of a Coordinating Committee. Membership included representatives from several Federal agencies and from each of the eleven basin states: Illinois, Indiana, Kentucky, Maryland, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. The Department of State Planning with assistance from the agencies of the Department of Natural Resources was Maryland's representative on the Coordinating Committee.

The results of the comprehensive Survey, which was completed in 1969, are discussed in a Main Report and 13 Appendices. These documents have been reviewed by interested Federal agencies, the Governors of basin states, and the Water Resources Council, prior to transmittal of the results to the President and the U. S. Congress.

OHIO RIVER BASIN COMMISSION

During the final phases of the Ohio River Basin Comprehensive

Survey a desire was expressed by certain members of the Coordinating Committee for some sort of implementing merchanism to carry forward the Committee's work. This desire lead to the creation of the Ohio River Basin Commission under the authority of Title II of the Water Resources Planning Act (P. L. 89-80).

The Commission was created by a Presidential Executive Order (No. 11578) on January 13, 1971.

Governor Marvin Mandel has designated Mr. James B. Coulter, Deputy Secretary, Department of Natural Resources, as the Maryland Commissioner and Dr. Albert R. Miller, Jr., Director, Development Planning and Research Programs, Department of State Planning, as his alternate. These men represent Maryland on the Commission.

PLAN FOR DEVELOPMENT OF WATER RESOURCES IN APPALACHIA

Completed in 1969, the U. S. Army Corps of Engineers study "Development of Water Resources in Appalachia" was carried out in response to Section 206 of the Appalachia Regional Development Act of 1965 (P. L. 89-4). The plan was prepared with Federal, state, local and private cooperation. During the formulation of the plan, the Water Development Coordinating Committee was created, comprised of representatives of the 13 Appalachian states, the Appalachian Regional Commission, and appropriate Federal agencies. The Departments of Water Resources and State Planning represented the State of Maryland on this Coordinating Committee.

Regional growth is the principle objective of the completed Plan. However, multiple objectives are identified and proposed projects assessed in terms of their contribution to each planning objective (regional development, national efficiency and environmental quality). The final product consists of a Main Report, which is subdivided into six parts and supported by nine Appendices. The study has been submitted to the Water Resources Council for review prior to transmittal to the President and Congress.

NORTH ATLANTIC REGIONAL WATER RESOURCES STUDY

The Water Resources Council delineated the North Atlantic Region as one of 18 regions throughout the United States for a comprehensive framework study in response to the 1961 report of the Senate Select Committee on National Water Resources. Congress further authorized and directed the Secretary of the Army to have the Corps of Engineers prepare a framework plan for the North Atlantic Region. This study was begun in 1966.

A Coordinating Committee, composed of representatives from each of the states of the region and concerned Federal agencies,

was formed to provide necessary liaison and coordination of study activities. Additionally, Committee members contributed needed data and information and participated in the formulation of a framework water resources plan. The Department of State Planning with the assistance and cooperation of the Department of Natural Resources serves as Maryland's representative on this Committee.

The NAR Study has undertaken numerous studies on water, related land resources, and social and economic aspects of resource use. The study consists of a Main Report and 23 supportive Appendices. The results of the study will be submitted to the concerned Federal agencies, the involved states, and the Water Resources Council for review prior to eventual transmittal to the President and Congress.

NORTHEASTERN UNITED STATES WATER SUPPLY STUDY

In 1965, the 89th Congress recognized the growing importance of coordinated regional planning to meet the future water supply needs of the Northeast and authorized the Northeastern United States Water Supply (NEWS) Study under Title I of Public Law 89-298. The study area includes all watersheds that drain into Chesapeake Bay, into the Atlantic Ocean north of Chesapeake Bay, into the St. Lawrence River, and into Lake Ontario. This area encompasses the New England States, New Jersey, Delaware, and the District of Columbia, and parts of New York, Pennsylvania, Maryland, Virginia and West Virginia.

The NEWS Study is being conducted by the U. S. Army Corps of Engineers in cooperation with other concerned Federal, State and local government agencies and the private water supply industry. The Department of State Planning in close cooperation with the Department of Natural Resources serves as Maryland's coordinator and State contact for study purposes.

Activities of the NEWS Study include:

a. a study of the long-range (to the year 2020) water supply needs of 32 selected metropolitan areas within the study area;

b. a study of the feasibility of using the Potomac Estuary as a supplementary water supply source for the metropolitan Washington, D. C. area;

c. examination of metropolitan areas within the NEWS Study area which may evidence major regional problems in meeting municipal, domestic, and industrial water supply requirements through the year 2020;

d. development of guidelines for a regional water supply system and identification of potential additional sources of supply; and

e. formulation of a coordinated general plan for essential water supply development and management including recommendations for the construction of specific projects whose costs will be shared on an (as yet undefined) basis between the Federal government and local interests.

Areas principally within Maryland examined or to be examined by the NEWS Study include the Baltimore metropolitan area, metropolitan Washington, D. C. area, and the Greater Wilmington Area (Del., Md., and N. J.).

ATLANTIC STATES MARINE FISHERIES COMMISSION 1/

Fifteen Atlantic Coast states entered into a compact establishing the Atlantic States Fisheries Commission. Each state is represented by three commissioners, one of whom must be the chairman or director of the fisheries management agency. In Maryland, this person is the Director, Department of Chesapeake Bay Affairs.

The Commission serves in an advisory capacity in the development of joint programs dealing with species of fish or bodies of water common to two or more states. The technical advice and research facilities of the United States Fish and Wildlife Service are available to the Commission and its member states.

1/ Sections 256-261, Article 66C - 1957 Code of Maryland Laws - 1970 Replacement Volume.

IV - OTHER AGENCIES AND INSTITUTIONS

SPECIAL PURPOSE DISTRICTS AND COMMISSIONS

Sanitary Districts. 1/ The governing body (or bodies) of any county (or counties) may by ordinance(s) or resolutions(s) create a district to acquire, construct, reconstruct, extend, repair, improve, maintain, and operate a project as a public and corporate body.

A sanitary district has taxing powers to obtain funds needed for construction, operation, and maintenance of works of improvement for water supply and sewerage facilities.

Soil Conservation Districts. 2/ Any 25 occupiers of land lying within the limits of the area proposed to be organized into a district may file a petition with the State Soil Conservation Committee 3/ requesting the formation of a soil conservation district. There are now 24 districts in Maryland with all farm land in the State included in one of these districts.

The conservation district is governed by a board of five supervisors, one of whom is appointed by the county governing body in the district, and four supervisors are appointed by the State Soil Conservation Committee from among residents of the district. Technical assistance is available to soil conservation districts from the U. S. Soil Conservation Service and the Extension Service, University of Maryland. Soil conservation districts have authority to borrow money (not to exceed $50,000), but do not have taxing and eminent domain powers.

Districts are authorized to carry out soil and water conservation measures. They have the authority to, and do, act as sponsoring organizations for watershed projects under the Watershed Protection and Flood Prevention Act (P.L. 83-566, as amended). In addition, the State-wide Sediment Control Act of 1970 4/ charged

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1/ Sections 645-673, Article 43 - 1957 Code of Maryland Laws - 1970 Replacement Volume.

2/ Sections 88-103, Article 66C - 1957 Code of Maryland Laws - 1970 Replacement Volume.

3/ The State Soil Conservation Committee is discussed under the University of Maryland section herein.

4/ Part of Chapter 245 (H. B. 1151) - Laws of Maryland 1970, Vol. 1.

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the soil conservation districts with responsibility for approving all sediment control plans except those required for activities of State agencies. Further discussion on the State-wide sediment control is presented under "County Governing Bodies" later in this section.

Public Drainage Associations. 1/ The county governing bodies have the power and authority to establish public drainage associations in their respective counties; to locate and establish ditches, drains, or canals; and construct, straighten, widen or deepen any ditch, drain, or watercourse for the purpose of draining wet, swampy, or flooded lands or lands subject to overflow.

To create a public drainage association, landowners in a contiguous body of wet, swampy, or overflowed land file a petition with the county governing body. The law provides for a determination of costs and benefits, public hearings and voting to determine the desirability of creating the public drainage association.

A public drainage association is governed by a board of managers elected by the benefited landowners in the area. An association has power to borrow money and the powers of taxation and eminent domain. Benefited landowners can be assessed for their proportionate share of the costs of establishing and maintaining the agreed upon works of improvement.

Public Watershed Associations. 2/ The governing body of any county has the power and authority to establish public watershed associations in their respective counties for the purpose of undertaking improvements for flood prevention, storage of water, adequate drainage, and protection of areas subject to sediment or erosion damages, and to cooperate with local, county, State, and Federal agencies in such activities.

Landowners within the area proposed for a public watershed association file a petition with the county governing body requesting the creation of an assocation. The law provides for hearings, voting by the benefited landowners and determination of costs and benefits.

A public watershed association is governed by a board of

1/ Sections 52-122, Article 25 - 1957 Code of Maryland Laws - 1966 Replacement Volume (1970 Supplement).

2/ Sections 169-218, Article 25 - 1957 Code of Maryland Laws - 1966 Replacement Volume (1970 Supplement).

directors elected by the benefited landowners. Associations have the power to borrow money and powers of taxation and eminent domain. Benefited landowners may be taxed for their proportionate share of the costs of constructing and maintaining planned works of improvement.

Shore Erosion Control Districts. 1/ The owners of property abutting or bordering upon any body of water in the State may have a shore erosion control district created for the purpose of protecting their property against shore erosion and deposition.

The landowners in the area file a petition with the county governing body requesting the creation of a district. The petition is then referred to the Shore Erosion Control Section of the Department of Chesapeake Bay Affairs. This Section reviews the petition and submits a report to the County Commissioners containing its recommendations on the feasibility and need for the district.

The county governing body is then authorized to establish the district and designate the area to be included.

Benefited landowners may be taxed for their proportionate share of the cost of the improvement. The county governing body is authorized to pay not more than 25 percent of the cost of the erosion control works of improvement and may accept from the State, the Federal government, and others, any portion of the remaining 75 percent of the total cost.

County commissions are authorized to construct erosion prevention works in districts upon petitioning by 75 percent of the property owners in the district.

A "Shore Erosion Control Construction Loan Fund" of $500,000 has been created solely to provide interest free loans to persons, municipalities, or counties for the construction of shore erosion control structures. The Fund is administered by the Department of Natural Resources on the basis of priorities and the nature and amount of public benefits provided by projects. The Fund is maintained by special real estate taxes levied by the State on privately owned property benefitted by the shore erosion control projects and by general fund budget appropriations. 2/

1/ Sections 167A-167E, Article 25 - 1957 Code of Maryland Laws - 1966 Replacement Volume (1970 Supplement).

2/ Sections 756-758B, Article 66C - 1957 Code of Maryland Laws - 1970 Replacement Volume.

Forest Conservancy Districts. 1/ It is the State's policy to encourage scientific development and management of its forests and woodlands and to maintain, conserve and improve the soil resources of the State. In doing so, the State shall encourage, assist and guide private ownership in the management of privately owned forest lands.

The Commission of Forests and Parks is empowered to administer forest conservation practices on privately owned forest land and the management of publicly owned forest lands vested in the Department of Forests and Parks without interfering with any of the powers and duties of the Department. The Commission shall divide the State into as many convenient districts as may be appropriate for convenience of administration and shall establish, by appointment, in each such district a district forestry board of not less than five members. The Commission employs and assigns project foresters to each county (or district) board who, in addition to other duties serve as secretary and executive officer of the county (or district) forestry boards.

It shall be the duty of the district forestry board:

1) to promote private forestry;

2) to make available the services of district foresters to landowners and advise them with regard to their forest and tree crop problems;

3) to assist county assessors in their appraisals of growth on forest lands for tax purposes;

4) to disseminate forest conservation information and collect data relative to forest conservation problems of the State;

5) to advise private owners of forest land on the construction of flood control measures, seeding and planting of waste slopes, abandoned or eroded lands, and the development of wildlife by the planting of food cover producing trees, bushes and shrubs; and

6) to pass on proposed work plans for the cutting of forest lands.

Patuxent River Watershed. 2/ The governing boards of Howard,

1/ Sections 338-400, Article 66C - 1957 Code of Maryland Laws - 1970 Replacement Volume.

2/ Sections 411A-411AD, Article 66C - 1957 Code of Maryland Laws - 1970 Replacement Volume.

Montgomery, Prince George's, Anne Arundel, Charles, and St. Mary's Counties created the Patuxent River Watershed in their respective counties and acting cooperatively with each other and the Department of Forests and Parks to provide for the protection of the watershed through a program of flood prevention, conservation, protection of areas subject to sediment or erosion damage, action to prevent encroachment by rapid growth and spread of urban development in cooperation with local county, State, and Federal agencies.

The governing boards of these counties are authorized to adopt, and from time to time amend, a Patuxent River Watershed Plan, bearing the approval of the Department of Forests and Parks.

For the purpose of carrying out the intent of this enabling legislation, the county governing bodies have the following powers and duties:

a. acquire title to land;

b. receive and expend contributions, donations, or appropriations which may be made for such purposes;

c. expend funds to acquire lands outside the area of the plan if such acquisitions are necessary to carry out the plan,

d. sell any land previously acquired but later found not to be needed for the purpose of this subtitle; and

e. levy an annual or special tax on all property assessed for taxation purposes to be used in carrying out the watershed plan.

The Department of Forests and Parks includes in its annual budget a request for funds to be used for the acquisition of lands within the above counties for the purposes enumerated in this subtitle. These funds when appropriated are matched by the appropriate county or counties.

Washington Suburban Sanitary Commission. The Washington Suburban Sanitary Commission was created by an Act of the Maryland Legislature in 1918. The jurisdiction of the Commission includes large areas of Montgomery and Prince George's counties.

The Commission has the powers and duties to:

a. provide for the construction, operation, and maintenance of water supply and sanitary sewerage facilities;

b. construct water and sewer house connection lines from the Commission's mains to abutting properties;

c. review and prescribe engineering requirements for all storm drainage plans within the suburban area and construct storm drains within the fund limits prescribed by the Maryland General Assembly 1/;

d. approve the location of and issue permits for all utilities to be installed in public ways of the Suburban Maryland Area;

e. preside over the design and construction of private water and sewerage systems proposed for areas within Prince George's and Montgomery Counties beyond the reach of WSSC's regional water and sewerage systems 2/;

f. maintain and operate the Anacostia River Flood Control and Navigation Project in central Prince George's County; and

g. maintain refuse collection service for about 63,000 residential units in suburban, unincorporated areas of Montgomery County, and operate the Anacostia Sanitary Landfill for refuse disposal in central Prince George's County.

The Maryland-National Capital Park and Planning Commission. The Maryland-National Capital Park and Planning Commission has general planning and park jurisdiction within the Maryland-Washington Metropolitan District and the Maryland-Washington Regional District. Both districts are in Montgomery and Prince George's Counties adjoining the District of Columbia.

The Commission is composed of ten members, five each from Montgomery and Prince George's counties.

Within the Maryland-Washington Metropolitan District, the Commission is empowered to acquire, develop, maintain, and operate a park system with recreational facilities, while in the Regional District, which includes and extends beyond the Metropolitan District, the Commission is empowered to make, adopt, and amend a general plan for the physical development of the District.

The major water related activities of the Commission are:

a. plan and construct of lakes and reservoirs for recreational purposes;

1/ The WSSC also maintains storm drainage facilities under its jurisdiction in parts of Montgomery and Prince George's counties.

2/ The WSSC also has "oversight" authority in the maintenance and operation of these facilities.

b. flood plain zoning prohibiting building within a flood plain resulting from a 50-year frequency storm;

c. acquire major stream valleys for parks;

d. propose additional lakes for recreational purposes;

e. cooperate with the Maryland Department of Forests and Parks for multi-purpose development of the Patuxent River Watershed; and

f. cooperate with the Potomac River Task Force in developing plans for the Potomac Valley Park.

Upper Potomac River Commission. 1/ The Upper Potomac River Commission, established in 1935, consists of three members appointed for six-year terms. The Governor appoints the Chairman, and the county commissioners of Allegany County and Garrett County each appoint a member. The Commission has jurisdiction over the water resources of Allegany County and of Election District Number 4 (Bloomington) in Garrett County. In 1953, the Commission took charge of the Savage River Dam, erected by the Army Corps of Engineers. In addition, the Commission operates the waste treatment plant at Westernport, Maryland.

COUNTY GOVERNING BODIES

Boards of County Commissioners 2/ and County Councils are concerned with the development and use of water and related land resources. In addition to their role in county planning and zoning, they have specific responsibilities with respect to many of the special-purpose districts. County governing bodies have definite jurisdiction with respect to the creation and operation of sanitary districts, public drainage associations, public watershed associations, and shore erosion control districts.

County governing bodies can act as one of the local sponsoring organizations in a number of the watershed projects under the Federal watershed Protection and Flood Prevention Act (P. L. 566, as amended).

The State-wide Sediment Control Act of 1970 provided that control

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1/ Acts 1935 Chap. 409; Acts 1936 Chap. 6; Acts 1939 Chap. 143; Acts 1947 Chap. 165.

2/ Article 25 - 1957 Code of Maryland Laws - 1966 Replacement Volume (1970 Supplement).

of sediment be shared by the Department of Natural Resources with the soil conservation districts and county governments. The Department of Natural Resources is to guide and offer technical assistance to the soil conservation districts and the counties and approve the sediment control plans of State agencies. All land clearing, grading, transportation, or other disturbances except agricultural practices and single-family residences on lots of two acres or more must receive a permit from the county, following the submission of a sediment control plan approved by the soil conservation district. Each county was required to adopt a sediment control ordinance prior to March 1, 1971 in order to carry out the provisions of the Act. The counties are also responsible for inspection and enforcement to insure compliance with the approved sediment control plans.

Section 387 (c) of Article 43 of the Annotated Code of Maryland required each of the 23 counties of Maryland and Baltimore City to adopt and submit a comprehensive water supply and sewerage plan to the Maryland State Department of Health and Mental Hygiene by January 1, 1970. These comprehensive water and sewerage plans were to include:

1. A description of existing water and sewerage facilities;

2. Projections of future water and sewerage needs, with particular emphasis on the first 10 years and including yearly priorities;

3. An analysis of alternatives;

4. Recommended program; and

5. Methods of financing the recommended program.

The comprehensive county water and sewerage plans were reviewed by the State Department of Health and Mental Hygiene and the Department of Water Resources, and approved by the Department of Health as required by law. During the 1970 session of the Maryland General Assembly, Section 387 (c) was amended to require the counties to submit comprehensive plans for solid waste management by July 1, 1972. This law requires periodic updating and revision by the counties of these comprehensive plans for water supply and solid and liquid waste management.

MUNICIPAL CORPORATIONS - CITIES AND TOWNS

Maryland has both municipally and privately owned and operated water supply companies. The two largest systems in the State are those operated by Baltimore City and the Washington Suburban Sanitary Commission.

The power of eminent domain can be used either by municipal or private water companies in acquiring water and other property rights.

The State Legislature has authorized municipalities to create special taxing districts for financing storm drainage systems. (Article 23A, Sec. 44, Code of Maryland Laws. 1957 Edition, 1965 Cumulative Supplement.)

Municipal authorities may take or acquire any land, structures, buildings, watercourses, water rights or other property in fee or as an easement, within or outside the municipality for the construction, establishment, extensions, alteration, and maintenance of any facility for a water supply, sewerage, drainage, or refuse disposal. (Article 43, Section 410 - Code of Maryland Laws - 1957 Edition.)

THE UNIVERSITY OF MARYLAND

A number of activities are carried on by the University of Maryland related to the conservation, development and use of water and related land resources. While State departments, agencies, and commissions have their related responsibilities delineated within legislative statute, the activities occurring within the University are not so assigned. For this reason, it is useful to briefly discuss the more important programs occurring at the University in the water resources field.

Natural Resources Institute. 1/ The Natural Resources Institute is under the supervision, direction, and control of the Board of Regents of the University. The Director is appointed by the Board of Regents.

The Institute conducts comprehensive research and educational programs relating to the non-agricultural and forest resources of the State and aids the various State agencies responsible for managing these resources.

The principal divisions of the Institute include the Chesapeake Biological Laboratory, Solomons, Maryland; the Inland Resources Division and the Conservation Education Division, College Park, Maryland; the Seafood Processing Laboratory, Crisfield, Maryland; and a field station in western Maryland dealing with problems in the Appalachian region. In addition, the Department issues a number of publications as part of its educational responsibilities.

1/ Sections 18-21, Article 66C - 1957 Code of Maryland Laws - 1970 Replacement Volume.

Water Resources Research Center. The University of Maryland's Water Resources Research Center both encourages and sponsors research in all aspects of water resource development, management, utilization, and conservation.

An interdisciplinary Advisory Committee with representatives from five colleges and the Maryland Institute of Natural Resources recommends operational policy for the center and reviews all proposed projects. Faculty members throughout the University are asked to submit research projects for consideration.

From its establishment in 1965, the program of the Center has been oriented almost entirely toward minimizing the impact of water use and re-use on the quality of Maryland's surface waters. However, more projects based upon the social sciences have been initiated recently. Examples of the research underway currently include:

a) effects of thermal effluents on productivity and stability of estuarine communities;

b) agricultural waste management for pollution abatement;

c) investigation of public and private interests in the development of the Chesapeake Bay area;

d) transient behavior of recharge-discharge areas in regional groundwater systems;

e) water quality criteria to protect fish populations directly below sewage outfalls; and

f) impact of economic development on water resources.

The Center receives an annual allotment from the Office of Water Resources Research (U. S. Department of the Interior) under the provisions of Public Law 88-379 to support approved projects.

Water Resources Study Committee. The Committee, appointed from the faculty of the University, conducted a study for the Department of Water Resources to develop guidelines for future water resources policies and programs. The Committee's reports are listed in the selected bibliography.

State Soil Conservation Committee. The following serve as members of the Committee: the Secretary of the Department of Natural Resources or his designated representative, the principal administrative officer for Agriculture Affairs at the University of Maryland or other University officials he may designate, the Chairman of the Maryland Agriculture Commission or other members

he may designate, the president of the Maryland association of soil conservation districts, and three soil conservation district supervisors representing different geographic areas of the State (specified in the enabling legislation). 1/

This Committee is responsible for:

a) creating soil conservation districts;

b) electing and appointing supervisors to serve as the governing body of districts;

c) assisting supervisors in carrying out their duties and programs;

d) keeping districts informed of activities of other districts and facilitating an interchange of advice and experience;

e) securing the cooperation of the Federal government, its agencies, and State agencies, in the work of such districts;

f) disseminating information throughout the State concerning the activities and programs of soil conservation districts; and

g) acting for the State in the approval of applications for planning assistance under the Watershed Protection and Flood Prevention Act (P. L. 83-566, as amended).

Agricultural Engineering Department. The State Department of Drainage promotes and encourages the drainage of agricultural land, and provides assistance to groups interested in organizing public drainage and watershed associations.

The Department of Agricultural Engineering is cooperating with the Livestock Engineering and Farm Structures Branch, Agricultural Engineering Research Division, U. S. Department of Agriculture, in studies of farmstead water supply and farm waste disposal.

Personnel from the Department of Agricultural Engineering render assistance to farmers in developing design criteria for irrigation systems and advise farmers on the quality of water for irrigation.

CHESAPEAKE BAY INSTITUTE OF THE JOHNS HOPKINS UNIVERSITY

The Institute, although not a State agency, is available to State agencies for conducting research projects under contractual agreements. Oceanographic studies are carried out by the Institute, primarily concerned with the waters and aquatic life of Chesapeake Bay.

1/ Chapter 328, Laws of Maryland 1971.

FIGURE S-1 (MD)

EXECUTIVE BRANCH REORGANIZATION

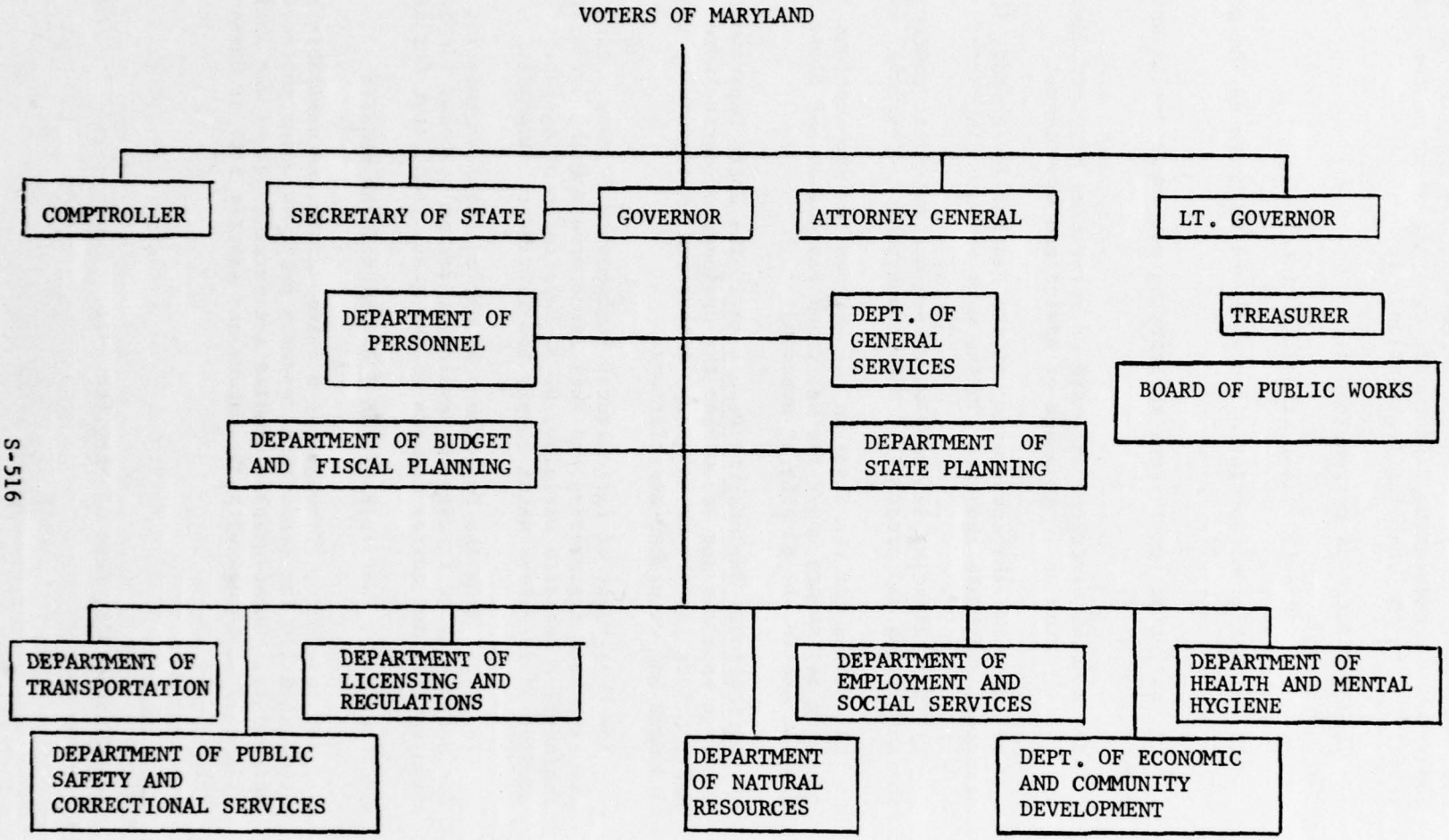
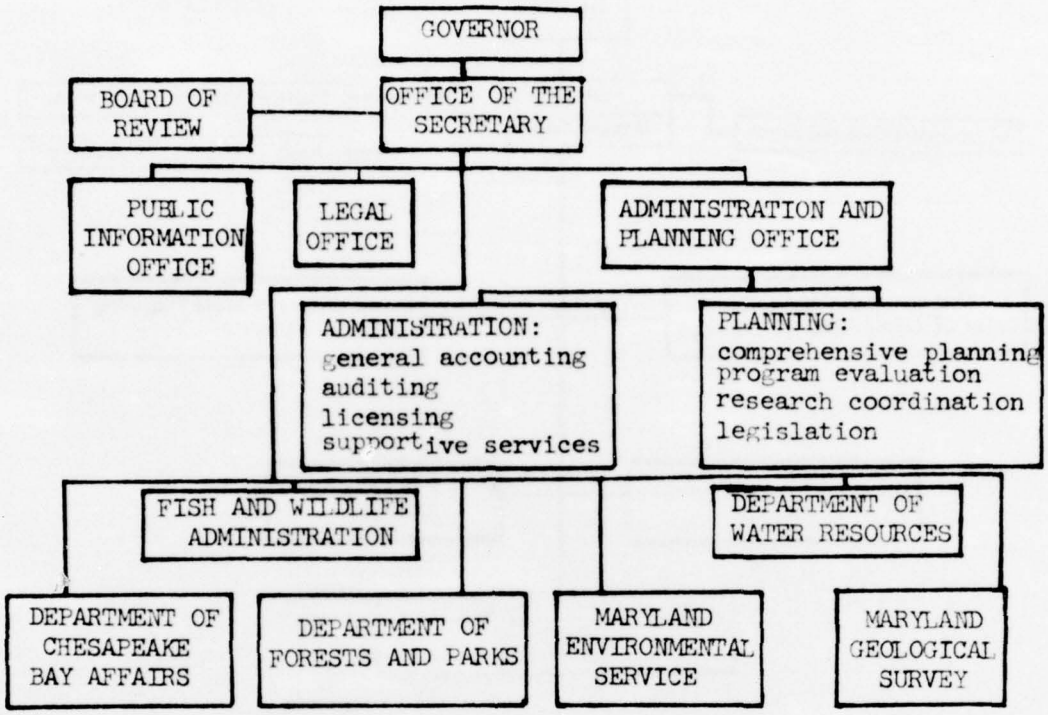


FIGURE S-2(MD)

DEPARTMENT OF NATURAL RESOURCES



Legislation enacted in 1970 has made possible the implementation of the following programs proposed by the Governor:

1. A Wetlands program providing a State policy for preserving wetlands by regulating the dredging and filling activities therein, prohibiting certain other activities, and providing a wetlands inventory.

2. A Sediment and Erosion Control program for review and approval of sediment and erosion control plans by local conservation districts, or by the Department of Natural Resources, before any land is disturbed.

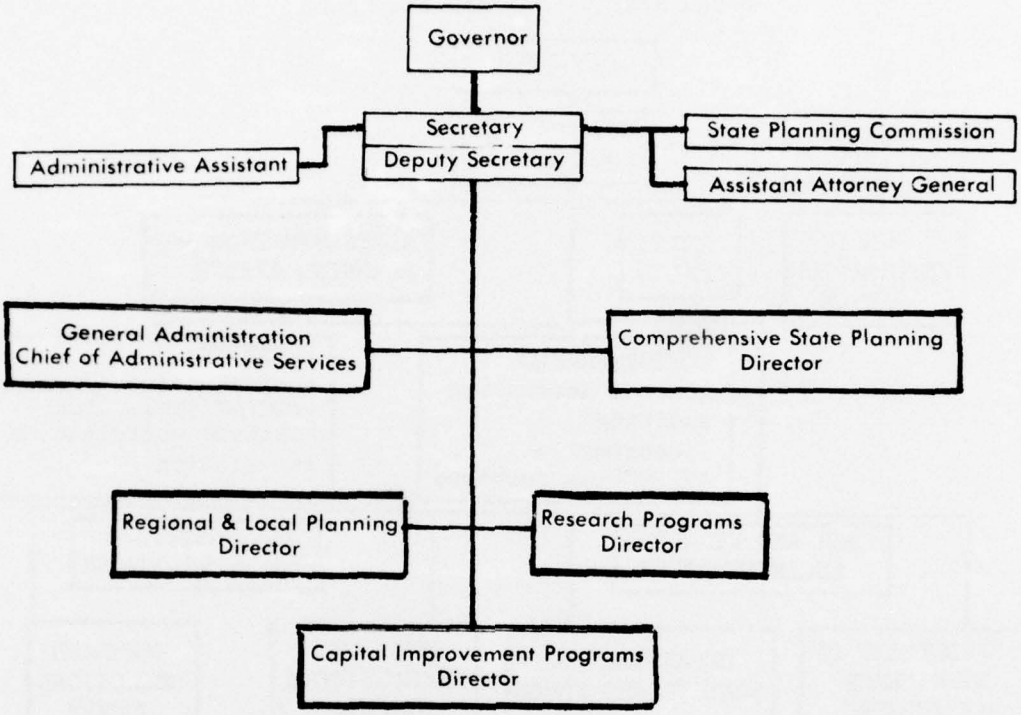
3. An Abandoned Mines Reclamation program to prevent, control, and abate pollution from abandoned mines, and to provide a $5 million fund for restoring areas occupied or degraded by abandoned mines.

4. The Maryland Environmental Service, within the Department of Natural Resources, plans and provides liquid and solid waste treatment and disposal facilities State-wide for communities and industries.

Other legislation complementing existing activities or procedures include financing for shore erosion control projects, Program Open Shore, water pollution control enforcement procedures and waterfowl laws.

FIGURE S-3(MD)
STATE OF MARYLAND

DEPARTMENT OF STATE PLANNING



The Table of Organization above, reflects the functional directions of the staff of the Department of State Planning. Consistent with the reorganization of the Executive Branch of State government increased emphasis is being placed on comprehensive State planning.

For the Department, comprehensive planning involves preparation, improvement and updating of general plans governing pattern and intensity of land use, public facilities—including transportation facilities, and the development and utilization of both human and natural resources. It invplves long-range fiscal and physical plans for such action. It further involves the programming of capital improvements and the major expenditures as based on a schedule of priorities and developed financing plans. These comprehensive planning activities require the coordination of all related plans and activities of the State and local governments and their various agencies.

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STATE OF WEST VIRGINIA

prepared by
State of West Virginia
Department of Natural Resources

January 1971

STATE OF WEST VIRGINIA
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STATE OF WEST VIRGINIA

I - STATE LAW

CASE LAW

Riparian Doctrine. West Virginia recognizes the common law and its riparian doctrine states that the rights to use stream water are derived from ownership of the lands through which the stream flows, or by which it is bounded. Priority of ownership of the land or use of the water is unimportant. The doctrine is one of general equality, regardless of frontage, and rights to use the water are not lost by non-use.

Most of the case law of West Virginia concerns the problems due to too much water, rather than too little, and involves the protection of property against water damage. The water classifications used in determining private water rights are water courses, where the riparian rights doctrine is involved for the most part, and surface waters, percolating waters, and underground waters in water courses.

Surface Water. Surface water has been described by the West Virginia courts as casual water, oozing through the soil, or diffusing and squandering over and under the surface, which may flow in a known direction, but which has no banks or channel cut in the soil. The water comes from precipitation and occasional outbursts in time of freshet. It also includes the moisture of wet, spongy, springy, or boggy land. Each landowner may use surface water on his own land as he chooses, for either commercial or domestic purposes, regardless of the effects either a shortage or abundance of water may have on his neighbor. This rule is subject to question if one maliciously deprives another of the surface water, or in another manner damages the owner of lower land.

Ground Water. Ground water which oozes or percolates through the earth has often been designated by the courts in West Virginia as percolating water. However, the courts do not define underground bodies of water and subterranean streams as percolating water but classify them as surface water.

Ground water may be used by the owner of the land for any legitimate use such as agriculture, mining and domestic purposes. The right of the owner to a reasonable use of underground water is termed as "reasonable use doctrine". According to this doctrine the use of percolating water by an owner must be limited so as not to deprive the owners of adjacent lands of the use of water.

It must be pointed out, however, there is virtually no instance

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of case law in West Virginia concerning ground water rights.

Access to Lakes and Streams. The riparian doctrine applies to the use of both lakes and streams. Navigable waterways are public properties, however, and access to these waterways must be permitted by riparian owners.

Eminent Domain. The case law on this subject is guided by Chapter 20, Article 1, Section 7, of the West Virginia Code. The Department of Natural Resources has the power of eminent domain by which it may appropriate property for the development of any of the following resources:

State forests: for the purpose of growing timber, demonstrating forestry, furnishing or protecting watersheds or providing public recreation;

State parks or recreation areas: for the purpose of preserving scenic, esthetic, scientific, cultural, archaeological or historical values or natural wonders, or providing public recreation;

Public hunting: for the development of hunting, trapping, or fishing grounds;

Wildlife: for fish hatcheries, game farms, wildlife researc areas and feeding stations; and for other purposes which are deemed necessary for carrying out the function of the Department of Natural Resources;

Water resources: land needed to install waste water treatment facilities may be taken as provided in 20-5A-11a. This was reinstated in the law of 1969.

The State Department of Highways of West Virginia has the power of eminent domain for the purposes of building and maintaining public highways (Chapter 17, Article 4, Section 5).

STATUTES

The following chapters of the Code of West Virginia define the duties and authority of the various State agencies in matters of water and related resources.

(1) Chapter 20 of the Code of West Virginia governs conservation of the Natural Resources of West Virginia.

(2) Chapter 20, Article 5, is the governing Section on Water Resources, especially as it pertains to water planning.

(3) Chapter 20, Article 5A, is the State Water Pollution Control Act.

(4) Chapter 20, Article 5B, is the Natural Stream Preservation Act.

(5) Chapter 5, Article 9, authorizes the establishment of the West Virginia Department of Commerce.

(6) Chapter 24, Articles 1 and 2, establishes the Public Service Commission of West Virginia. This Commission in Chapter 61, Article 3 Section 47 is authorized to approve for safety purposes any obstruction ten feet high or more across any watercourse.

(7) Chapter 29, Article 2, sets up the State Geological and Economic Survey.

(8) Chapter 16, Articles 1, 11, 12, 13 and 13A, gives the State Health Department certain authority in water matters.

(9) Chapter 19, Article 1, authorizes the establishment of the Department of Agriculture.

(10) Chapter 19, Articles 21, 21A and 21B, established in 1961, states the duties of the Soil Conservation Committee.

REGULATORY AUTHORITY

Impoundments. Chapter 61, Article 3, Section 47, of the 1961 West Virginia Code, requires permit or approval for dams 10 feet or higher across any stream or watercourse. The Public Service Commission of West Virginia is charged with investigation and approval of the design and construction of the dam.

Slack-Water Dams. The Department of Highways Commissioner, in constructing public highways, bridges and culverts, as provided by law, and any municipal corporation constructing or improving public streets, viaducts, bridges and culverts, either severally or jointly, upon request of the Director of the Department of Natural Resources and with the approval of the Department of Highways Commissioner, may construct and maintain slack-water dams in connection with such public highways, streets, bridges, culverts or viaducts so as to create reservoirs, ponds, water parks, basins, lakes, or other incidental works to conserve the water supply of the State. (1959, c 77; 1961, c 133; 1964, c 20.)

Channel Encroachments. There are no statutory laws pertaining to channel encroachments; however, when encroachment causes damage

to other property owners, litigation may be brought by the damaged person or persons.

Flood Plain Management. No State law exists concerning flood plain use. Regulatory authority controlling flood plain use and development would depend on adoption of zoning regulations at the local and county level. Flood plain studies have been carried out by the Corps of Engineers in cooperation with the Division of Water Resources of the Department of Natural Resources in four locations in West Virginia.

II - ADMINISTRATIVE STRUCTURE

STATE AGENCIES

Department of Natural Resources. The Division of Water Resources has responsibility for the water resources of the State in three main administrative areas: Water Resources (Planning, Development and Management), Water Pollution Control and Natural Streams Preservation Act (Articles 20-5, 5A and5B). Under the Article 5, Water Resources, the public policy states that: It is declared to be the public policy of this State that the water resources of this State with respect to the quantity thereof shall be available for reasonable use by all of the citizens of this State, and that such use shall be subject to the provisions of Article 5 A [20-5A-1 et seq.] of this chapter. (1967, C. 143) The water resources effort empowers the Chief to: in addition to all other powers and duties of the Chief of the Department's Division of Water Resources, as prescribed in this article or elsewhere by law, the Chief under the supervision of the Director, shall have and may exercise the following powers and authority and shall perform the following duties:

(1) To conduct, or contract for the conducting of, scientific investigations, experiments and research, and to collect data, concerning the water resources of the State;

(2) To advise all users of water resources as to the availability of water resources and the most practicable method of water diversion, use, development and conservation; and

(3) To cooperate with Federal officers and agencies, other State agencies and officers, interstate agencies, and other persons in the conservation, improvement and development of water resources.

In addition to all other powers and duties of the Water Resources Board, as prescribed in this article or elsewhere by law, the Board shall have and may exercise the following powers and authority and shall perform the following duties:

(1) To enter into compacts and agreements concerning this State's share of waters in watercourses where a portion of such waters is contained within the territorial limits of this State or of a neighboring state or states, subject to the approval of the legislature; and

(2) To promulgate rules and regulations, in accordance with the provisions of chapter twenty-nine-A, 29A-1-1 et seq., of this Code, to implement and make effective the powers, duties and responsibilities vested in the Board and the Chief by the provisions

of this article and otherwise by law.

In addition to the State's responsibility concerning slackwater dams, as provided in the Water Resources section, the Division of Water Resources has assigned duties in the boundary of water areas, as it relates to conservation, beautification and improvement of all such water areas of the State. Also the Director of Natural Resources, the Chief of the Division of Water Resources and the Chief Law Enforcement Officer have assigned responsibilities as they relate to litter along streams rivers, brooks, etc. Conviction on a stream litter charge constitutes a misdemeanor and carries a fine of $20 to $500 and/or a six month prison sentence.

Article 5A is the Water Pollution Control Act and is intended to reduce or eliminate pollution of the State's waters. The declaration of policy states: It is declared to be the public policy of the State of West Virginia to maintain reasonable standards of purity and quality of the water of the State consistent with (1) public health and public enjoyment thereof; (2) the propagation and protection of animal, bird, fish, aquatic and plant life; and (3) the attraction, development, maintenance and expansion of agriculture, mining, manufacturing and other business and industry.

By definition pollution includes not only present and past acts, but also controls future acts that may cause pollution. Permits are required for all discharges to waters of the State and include, but are not limited to, establishments, which in turn includes mills, factories, tanneries, paper mills, quarries, wells, etc., new disposal systems, increased loads, mines that are to be opened, reopened, operated or abandoned, as well as disposal wells for the injection of waste into underground strata. Article 5A clearly sets out for the State its powers to set water quality standards, take injunctive or emergency action in certain cases of pollution, issue orders, issue or deny permits, and carry out a surveillance program relative to their action. The State can proceed by taking administrative action, criminal action or both and in this effort can appoint Voluntary Water Quality Monitors in addition to its inspection staff, to serve at the will and pleasure of the Chief at times and places designated by the chief. Criminal action can be instituted where pollution occurs or the Water Pollution Control Act is otherwise violated fines range from $100 to $1000 in general with provision for $1000 to $10,000 fines for willful pollution. The Chief, under Article 5A, has extensive powers and authority in the duties such as:

(1) To encourage voluntary cooperation by all persons in controlling and reducing the pollution of the waters of this State, and to advise, consult and cooperate with all persons, all agencies of this State, the Federal government or other states, with interstate

agencies in the furtherance of the purposes of this article and to this end and for the purpose of studies, scientific or other investigations, research, experiments and demonstrations pertaining thereto, the Department may receive moneys from such agencies, officers and persons on behalf of the State;

(2) To encourage the formulation and execution of plans by cooperative groups or associations of municipal corporations, industries, and other users of waters of the State, who jointly or severally, are or may be the source of pollution of such waters, for the control and reduction of pollution;

(3) To encourage, participate in, or conduct or cause to be conducted studies, scientific or other investigations, research, experiments and demonstrations relating to water pollution;

(4) To study and investigate all problems concerning water flow, water pollution and the control and reduction of pollution of the waters of the State, and to make reports and recommendations with respect thereto;

(5) To collect and disseminate information relating to water pollution and the control and reduction thereof;

(6) To develop a public education and promotion program to aid and assist in publicizing the need of and securing support for pollution control and abatement;

(7) To sample ground and surface water with sufficient frequency to ascertain the standards of purity or quality from time to time of the waters of the State;

(8) To develop programs for the control and reduction of the pollution of the waters of the State;

(9) To exercise general supervision over the administration and enforcement of the provisions of this article, and all rules, regulations, permits and orders issued pursuant to the provisions of this article;

(10) To require the prior submission of plans, specifications, and other data relative to, and to inspect the construction and operation of, any activity or activities;

(11) To require any and all persons directly or indirectly discharging, depositing or disposing of treated or untreated sewage, industrial wastes, or other wastes, or the effluent therefrom, into or near any waters of the State or into any underground strata, and any and all persons operating an establishment which produces or which may produce or from which escapes, releases or emanates or may

escape, release or emanate treated or untreated sewage, industrial wastes or other wastes or the effluent therefrom, into or near any waters of the State or into any underground strata, to file with the Division of Water Resources such information as the Chief may require in a form or manner prescribed by him for such purpose, including, but not limited to, data as to the kind, characteristics, amount and rate of flow of any such discharge, deposit, escape, release or disposition.

Article 5B has provisions for the deletion of modifications in certain streams or stretches of streams. The policy declaration states: In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not impound, flood or divert all streams within the State of West Virginia, leaving no streams designated for preservation and protection in their natural condition, it is hereby declared to be the public policy of this State to secure for the Citizens of West Virginia of present and future generations the benefits of an enduring resource of free-flowing streams possessing outstanding scenic, recreational, geological, fish and wildlife, botanical, historical, archeological, or other scientific or cultural values. Prior to the installation of modification, defined as the impounding, diverting or flooding of a stream, a permit from the Division of Water Resources is necessary. The basic procedures for issuance, denial and appeals are provided in Article 5B as in Article 5A. One main difference is the provision for public notice and hearing prior to action on a permit application.

Department of Commerce. The Department of Commerce has the authority to investigate, study and undertake ways and means of promoting and encouraging the prosperous development and protection of the legitimate interests and welfare of business, industry and commerce within the State. The Department also has authority to collect and disseminate information to engage in technical studies, scientific investigations, statistical research and educational activities necessary or useful for the proper execution of its powers and duties. Planning and study of the management in control of water are an integral part of the responsibilities of the Department of Commerce, since all industrial, tourist and recreational development projects are directly or indirectly related to water resources management and control. The Department is empowered and entrusted to conduct comprehensive planning programs for the State in its entirety and/or sections of the State.

Public Service Commission. No public utility is to be constructed until a certificate of public convenience and necessity is obtained from the Public Service Commission. Also, "No person shall construct any dam or other obstruction more than 10 feet in height across any stream or watercourse unless the design and proposed construction shall have been declared to be safe by an order

entered by the Public Service Commission after a full investigation".

West Virginia Geological and Economical Survey. This agency's function is to provide for the preparation and publication of reports and maps to illustrate the natural resources of the State together with the necessary investigations preparatory thereto. The duties of the Survey are:

Examination of the geological formation of the State with special reference to their economic projects;

Examination and classification of the soils and the study of their adaptability to particular crops;

Examination of the forest and timberlands of the State;

Preparation of special geological and economic maps to illustrate the resources of the State;

Preparation of special reports of the geology and natural resources of the State; and

Consideration of such other scientific and economic questions as shall be of value to the people of the State.

West Virginia Department of Agriculture. This Department has under its jurisdiction the Soil Conservation Committee. This Committee assists the local Soil Conservation Districts both technically and financially in securing easements and rights-of-way for soil and water conservation projects. The State legislature normally contributes $50,000 annually to the Soil Conservation Committee for this assistance.

West Virginia Department of Health. The State Board of Health shall promulgate and enforce regulations governing the design of all public water systems, plumbing systems, sewerage systems and sewage treatment plants, swimming pools and excreta disposal methods in this State, whether publicly or privately owned; the operation of all public chlorination and filtration plants, and the qualifications of operators, chemists, bacteriologists and superintendents of filtration, or others, who are in actual charge of the plant operation of all public water systems, sewage treatment plants and swimming pools. (16-1-3)

The personnel of the State's Department of Health shall be at the disposal of any county, municipality, firm, corporation, company, person or persons to consult and advise with them as to the most appropriate design, method of operation or alteration of the systems or methods. (16-1-9)

West Virginia Department of Highways. The Department of Highways has authority to change or divert any stream of water which is not navigable when it is incidental to the construction or maintenance of any State road..(17-4-35) Chapter 20, Article 5, Section 6, of the Code of West Virginia reads in part as follows:

"Location and Construction of Slack-Water Dams. The Highway Department Commissioner, in constructing public highways, bridges and culverts, as provided by law.....upon request of the Director of the Department of Natural Resources, and with the approval of the Highway Department Commissioner, may construct and maintain slack-water dams in connection with such public highways, streets, bridges, culverts or viaducts so as to create reservoirs, ponds, water parks, basins, lakes or other incidental works to conserve the water supply of the State."

The Department of Highways Commissioner is assigned the duty to "acquire, establish, construct, maintain and operate, in the name of the Commission, roadside recreation areas along and adjacent to the State highways and county roads." (17-2A-8)

BOARDS AND COMMISSIONS

Geological Survey Commission. The Geological Survey Commission consists of the Governor, the State Treasurer, the President of West Virginia University, the Commissioner of Agriculture and the Director of the Agricultural Experiment Station of West Virginia University. The Commission has general charge of the State Geological Survey and appoints the Director and State geologist.

West Virginia Board of Health. The West Virginia Board of Health consists of nine members appointed by the Governor for a term of nine years. Three members are to be physicians or surgeons holding the doctor of medicine, one dentist, one osteopathic physician, one pharmacist, one hospital representative, and two representative citizens. The Board appoints the State Director of Health and he serves at their will and pleasure.

The Natural Resources Commission. This is an advisory commission to the Director of the Department of Natural Resources. It is composed of seven members appointed by the Governor for seven year terms. There is to be one member from each of the congressional districts and one from the State at large.

The Water Resources Board. The Board is composed of five members appointed by the Governor for five year terms. One member shall be truly representative of the manufacturing industry of the State, one shall be truly representative of the mining industry of

the State and three members shall be truly representative of the public at large. The Board hears appeals on orders issued by the Chief of the Division of Water Resources and adopts regulations necessary for the Division and the Board to carry out their duties and responsibilities.

The Advisory Board to the State Department of Highways. This Board is composed of seven members; one from each congressional district and one member-at-large. This is a bi-partisan board whose members at any time shall be of the same political party.

The Advisory Board to the Department of Commerce. The Advisory Board consists of seven members appointed by the Governor for terms of four years. No more than four members at any time shall be of the same political party.

SPECIAL PURPOSE DISTRICTS

Middle Island Creek Development Authority. This special district is specifically established by Chapter 218 of the Code of West Virginia. Authority boundaries are formed by the watershed of Middle Island Creek and its tributaries, which are located within the counties of Doddridge, Pleasant and Tyler.

FLOOD CONTROL DISTRICTS

Soil Conservation Districts. There are 14 such districts within the State. The State Soil Conservation Committee of the Department of Agriculture is an agency of the State which has the following responsibilities and duties:

(1) To offer assistance as may be appropriate to the supervisors of soil conservation districts;

(2) To keep the supervisors of each of the several districts informed of the activities and experience of all other districts;

(3) To coordinate the programs for the several districts;

(4) To insure the cooperation and assistance of the United States and any of its agencies and of agencies of the State in the work of such districts;

(5) To disseminate information throughout the State concerning the activities and programs of the soil conservation districts;

(6) To accept and receive donations, gifts, contributions, grants and appropriations and money for service materials or other items from the United States or any of its agencies or from the State of West Virginia or from other sources; and

(7) To obtain options on and to acquire by purchase, exchange, lease, gifts, grants, bequests, device or otherwise any property real or personal or rights or interests thereto.

The powers of the districts are as follows:

(1) To conduct surveys, investigations and research related to the character of soil erosion, floodwater, sediment damage, conservation, development, utilization and disposal of water and the preventive and control measures needed;

(2) To publish the results of such surveys, investigations or research and to disseminate information concerning such preventive and control measures and works of improvement;

(3) To conduct demonstrational projects within the district on lands owned or controlled by the State or any of its agents and on any other land within the district upon obtaining the consent of the owner;

(4) To carry out preventive and control measures and works of improvement within the district;

(5) To cooperate or enter into agreements with any agency, governmental or otherwise, or occupier of land within the district in the carrying on of erosion control and preventive operations and works of improvement;

(6) Tc obtain options upon and to acquire any property real or personal, or rights or interest therein;

(7) To make available agricultural or engineering machinery and equipment, fertilizer, seeds and seedlings, and such other materials or equipment for the prevention and control of soil erosion and flood prevention, or the conservation, development, utilization and disposal of water;

(8) To construct, improve, operate and maintain such structures as may be necessary or convenient for the performance of any of the operations authorized by the district;

(9) To develop comprehensive plans for the conservation of soil resources and for flood prevention or the conservation development, utilization and disposal of water within the district;

(10) To take over by purchase, lease or otherwise, and to administer any soil conservation flood prevention, drainage, irrigation, water management, erosion control or erosion prevention projects or combinations thereof located within its boundaries undertaken by the United States or any of its agencies, or by this State

or by any of its agencies; and

(11) To sue and be sued in the name of the district.

The governing body of any governmental division which may reasonably be expected to receive a benefit from the construction, improvement, operation, or maintenance of any works of any improvement may expend money for such construction, improvement, operation, or maintenance if this expectation exists as to any part of the governmental division even though such works of improvement are not located within the corporate limits of the governmental division or are not within the State; provided however, that if the expenditure is not made directly by the governmental division for such purposes, it shall be made only through a soil conservation district or watershed improvement district organized under the laws of the State, but it shall not be necessary that any part of the governmental division be within the limits of the district through which the expenditure is made. Such governing bodies or governmental districts may set up in their respective budgets funds to be spent for such purposes. Municipalities and counties may levy and collect taxes for such purposes in the manner provided by law.

Watershed Improvement District. Whenever within a soil conservation district or districts, soil conservation or the conservation, development, utilization, or disposal of water will be promoted by the construction of improvements for such purpose or purposes, a watershed improvement district may be established within such soil conservation district or districts. The powers of the watershed improvement district shall be the same as the powers of the soil conservation district and it shall constitute a governmental division of the State and public body corporate.

PUBLIC SERVICE DISTRICTS

A county may on its own motion create a public service district; also, any 100 voters who own property in the proposed district may petition the county court for the creation of a district. A public hearing is held and if 30 percent of the voters of the proposed district protest in writing, the district can be formed only after the proposal has been approved by the majority of the voters in the district. Broad powers are granted a public service district to permit it to construct and operate water and/or sewerage systems. A public service board of three members is appointed by the county court to govern the district; more members are appointed if municipalities are in the district. The Public Service Board has the authority to establish rates subject to approval by the State Public Service Commission and to collect service charges and to use the money to operate the system or systems. The Board

may issue revenue bonds to finance the system or systems. Public Service Districts, municipalities and counties have the following financing capabilities; they can issue general obligation bonds based on their taxing power within the limit established by the State Constitution, and/or they can issue revenue bonds to be self-liquidating by the application of a service charge.

COMMONWEALTH OF VIRGINIA

Prepared by

Commonwealth of Virginia
Department of Conservation and Economic Development
Division of Water Resources

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COMMONWEALTH OF VIRGINIA

I - STATE AND FEDERAL POWERS AND RESPONSIBILITIES

THE RULE OF DECISION

The General Convention, at its meeting in Williamsburg on May 6, 1776, stated that:

"....the common law of England, all statutes and acts of Parliament made in aid of the common law prior to the fourth year of the reign of King James the First, and which are of a general nature, not local to that kingdom, together with the several Acts of the General Assembly of this colony, now in force, so far as the same may consist with the several ordinances, declarations, and resolutions of the General Convention, shall be the rule of decision, and shall be considered as in full force, until the same shall be altered by the legislative power of this colony."

That portion pertaining to the "acts of Parliament" was repealed in 1792, but the remainder was unchanged; today the Code of Virginia (1-10) states that "....the common law of England, in so far as it is not repugnant to the principles of the Bill of Rights and the Constitution of this State, shall continue in full force within the same, and be the rule of decision except as altered by the General Assembly."

These enactments provide a guide for the courts in matters pertaining to water as well as to other subjects, and recognize the power of the General Assembly to alter the common law of England whenever it becomes necessary.

CONSTITUTION OF VIRGINIA

Article IV, Section 14 of the Constitution, as found in the Code of Virginia, 1971 Cumulative Supplement, Annotated, Volume 9, prohibits the General Assembly from enacting "Any local, special, or private law" for "Declaring streams navigable, or authorizing the construction of booms or dams therein or the removal of obstructions therefrom."

Article XI, Section 1 of the Constitution, as found in above 1971 Supplement to Volume 9, states in part as follows:

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ARTICLE XI

CONSERVATION

1. Natural resources and historical sites of the Commonwealth. - To the end that the people have clean air, pure water, and the use and enjoyment for recreation of adequate public lands, waters, and other natural resources, it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources, its public lands, and its historical sites and buildings. Further, it shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment, or destruction for the benefit, enjoyment, and general welfare of the people of the Commonwealth.

(and Section 2, Article XI, provides:)

2. Conservation and development of natural resources and historical sites. - In the furtherance of such policy, the General Assembly may undertake the conservation, development, or utilization of lands or natural resources of the Commonwealth, the acquisition and protection of historical sites and buildings, and the protection of its atmosphere, lands, and waters from pollution, impairment, or destruction, by agencies of the Commonwealth or by the creation of public authorities, or by leases or other contracts with agencies of the United States, with other states, with units of government in the Commonwealth, or with private persons or corporations. Notwithstanding the time limitations of the provisions of Article X, Section 7, of this Constitution, the Commonwealth may participate for any period of years in the cost of projects which shall be the subject of a joint undertaking between the Commonwealth and any agency of the United States or of any state.

THE COMMERCE CLAUSE

The Federal Constitution became effective on March 4, 1789, and on that date Virginia, along with othe states, granted certain of its powers to the central government. The so-called "commerce clause", Section 8 of Article 1, has had and continues to have more influence on the water resources of Virginia than others. It provides that "the Congress shall have power . . . to regulate commerce with foreign nations, and among the several states, and with the Indian Tribes."

In interpreting the commerce clause of the U.S. Constitution, the Supreme Court has held that the power to regulate commerce "comprehends navigations within every state in the Union" and, since it is necessary to provide a suitable supply of water to insure navigability, it is also held that the Federal government can control

that supply. Such control may be exercised by the erection of structures to contain floods, or by preventing the construction of works which would cut off the supply of water needed for navigation.

The U.S. Supreme Court has also recognized that, although each state has the power to change the common law rule as to the streams within its dominion, two limitations on this power must be recognized. First, in the absence of specific authority from Congress, a state cannot by its legislation destroy the right of the United States, as the owner of lands bordering on a stream, to the continued flow of its waters - so far at least as may be necessary for the beneficial uses of the government property. Secondly, each state is limited by the superior power of the Federal government to secure the uninterrupted navigability of all navigable streams within the limits of the United States. Thus the commerce clause vests in the Federal government the right to take all needed measures to preserve the navigability of the navigable watercourses of the country, even against state action.

FEDERAL POWER ACT

There are, apart from the limitations mentioned above, many other indications of Federal recognition of the rights of a state to change this common law rule and permit the appropriation of the flowing waters for such purposes as it deems wise. Many provisions of the Federal Power Act pertaining to hydroelectric power developments point to the need for compliance with state requirements. Each applicant for a license must submit to the Federal Power Commission satisfactory evidence that the said applicant has complied with the requirements of the state, or states, within which the proposed project is to be located, with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes, and also with respect to the right to engage in the business of developing, transmitting, and distributing power, and in any other business necessary to effect the purposes of a license under this act.

WATERSHED PROTECTION AND FLOOD PREVENTION ACT

This act authorizes the Secretary of Agriculture to cooperate with and give financial assistance to states and local agencies in planning and carrying out certain works of improvement. Before providing Federal assistance, however, the Secretary of Agriculture requires that local organizations acquire, or provide assurance that landowners of water users have acquired, such water rights, required by state law, as may be needed in the installation and operation of the work of improvement.

RIVER AND HARBOR ACTS AND FLOOD CONTROL ACTS

In passing these acts, Congress has outlined the procedure to be followed with respect to plans, proposals, or reports for works of improvements, in insure that the views of the Governor of each affected state will be available to members of Congress at the time they consider any recommended plan or project. These views are given much weight in Congress.

Undoubtedly, the thought that the states should retain the maximum possible control of their water resources was in the minds of the members of the General Assembly when they announced a state policy as to waters in 1954. "The regulation, control, development, and use of waters for all purposes beneficial to the public are within the jurisdiction of the state which in the exercise of its police powers may establish measures to effectuate the proper and comprehensive utilization and protection of such waters" (62, 1-11).

FEDERAL AGENCIES

Many Federal agencies have functions affecting the water resources of Virginia and their development. The Geological Survey of the United States Department of the Interior assists states in the accumulation of basic data concerning surface water, ground water, and their chemical quality. Such basic data are essential to all water studies. The Surgeon General of the Public Health Service is charged with providing assistance to states in their pollution abatement programs. In most of his functions the Secretary of Agriculture is interested in water but it is probable that the activities of the Soil Conservation Service under Public Law 566 approach more nearly the field of water resources. The U.S. Army, Corps of Engineers, has always been charged with executing Federal functions in providing and maintaining channels and harbors for navigation. They are also responsible for complying with Congressional directives concerning studies, plans, proposals, projects, or construction for flood control and related purposes. The Water Resources Planning Act of 1965 (79 Stat. 244) expresses the concern of Congress for orderly development of water and related land resources by providing for a Federal Water Resources Council, interstate River Basin Commissions, and for financial assistance to the states for water resources planning. The Water Resources Research Act of 1964 (60 Stat. 810) provides for establishment of Water Resources Research Centers (Virginia's is at Blacksburg) which foster a wide range of research.

Other Federal agencies interested in the water resources of Virginia are: Agricultural Conservation Program Service, Bureau of Mines; Coast and Geodetic Survey; Coast Guard; Farmers Home

Administration; Federal Power Commission; Fish and Wildlife Service; Forest Service; National Park Service; Rural Electrification Administration; Southeastern Power Administration; Tennessee Valley Authority; and the Weather Bureau.

II - STATE LAW

Much of the water law of Virginia appears in the decisions of our courts. In ruling on the cases before them, the courts have used the common law as the rule of decision. Since there are many possible questions concerning water resources which have never been before our courts, there are some for which the answers cannot be found in the decisions. However, adequate rulings have been made on several other phases of the subject and, from these, it is possible to obtain precedents to guide decisions in similar cases which may arise. Some of these decisions are quoted in part in the following paragraphs.

SURFACE WATER

Diversion. If one, using his own land, diverts (diffused) surface water from its usual course, and it turns upon another's land, where it has never gone before, no action lies, where the common law rule prevails (Jordan v. Benswood, 42 W. Va. 312, 26 S.E. 266 (1896)). Accordingly, where the owner constructs a building on his own land in the usual and customary manner, he is not liable for the retention or diversion of (diffused) surface water. (Harris Motor Co. v. Pulaski Furniture Co., 151 Va. 125, 144 S.E. 414 (1928)). But the owner of land has no right to interfere with the flow of surface water in a natural channel or watercourse, and if such flow be hindered or prevented, so as to cause the surface water to accumulate in ponds and thereby injure the lands of another, the person causing such hindrance or obstruction is liable to the owner of the land for the injury occasioned thereby. (N. & W. v. Carter, 91 Va. 587, 22 S.E. 517, (1895)). The measure of damage, where a lower landowner needlessly or negligently injures the upper landowner by backing surface water upon his property, is the difference between the market value of the property with proper drainage and the market value as thus injured. (Raleigh Court Corp. v. Faucett, 140 Va. 126, 124 S.E. 433 (1924)).

Navigability. That a creek had been used for trade and commerce on occasions when conditions were favorable was not sufficient to show that creek was a navigable stream. (Ewell v. Lambert, 177 Va. 222, 13 S.E. 2d 333, 335 (1941)).

A stream is a navigable or floatable one if, by the increased precipitation at seasons, recurring periodically with reasonable certainty, the flow of water will be sufficient to be substantially useful to the public for transportation. (Hot Springs Lumber and Manufacturing Co. v. Revercomb, 106 Va. 176, 55 S.E. 580, 582 (1907)).

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Where interstate waters are capable of promoting interstate commerce to a substantial degree, they are said to be waters of the United States, and they constitute navigable waters of the United States in contradistinction from navigable waters of the states when they form in their ordinary condition by themselves, or by uniting with other waters, a continued highway over which commerce is or may be carried on with other states or foreign countries in the customary modes in which such commerce is conducted by water. (U.S. v. App. Elect. Pow. Co., C.C.A. Va., 107 F. 2nd 769, 780 (1940)).

Riparian Law. According to the weight of authority, riparian land is limited in its extent by the watershed of the stream. Lands beyond the watershed cannot be regarded as riparian, thought they be part of a single tract, held in a common ownership, which borders upon the stream. (Note in 11 L.R.A. (N.S.) 1062, quoted in Town of Gordonsville v. Zinn, 129 Va. 542, 106 S.E. 508, 511 (1921)).

The riparian owner is entitled to the natural flow of the water in its accustomed channel, undiminished in quantity, and unimpaired in quality, except as may be occasioned by the reasonable use of the stream by other like riparian owners. (Burwell v. Hobson, 12 Grat. (53 Va.) 325; Mumpower v. City of Bristol, 90 Va. 151, 17 S.E. 853 (1855)).

All riparian proprietors have an equal right to use the water, and each must exercise his right in a reasonable manner, and to a reasonable extent, so as not to interfere unnecessarily with the corresponding rights of others.

Exclusive rights in the flow of the stream cannot be acquired by mere priority of use.

There is no fixed rule for determining what will constitute a reasonable use, each case depends upon its own peculiar facts, and this is usually a question of fact to be submitted to, and determined by a jury. (Davis v. Town of Harrisonburg, 116 Va. 864, 83 S.E. 401 (1941)).

These rights must be exercised and enjoyed on the land adjacent to the ripus, or bank, and not on land physically separated from the stream, although belonging to the same owner. Thus, a municipality which buys land on a stream several miles from its corporate limits does not hereby become a riparian owner and entitled as such to use the water of the stream to supply its inhabitants. (Town of Gordonsville v. Zinn, 129 Va. 542, 106 S.E. 508 (1921)).

The use of waters of a stream to supply the inhabitants of a municipality with water for domestic purposes is not a riparian right. (Town of Purcellville v. Potts, 179 Va. 514, 19 S.E.2d 700,

141 A.L.R. 633 (1942)).

The respective riparian rights of upper and lower riparian owners are in no sense easements, but are qualified property rights incident to the ownership of the soil through or by which waters flow. (Hite v. Town of Luray, 175 Va. 218, 8 S.E.2d 369, 372 (1940)).

Riparian rights in a stream pertain to the land abutting on the stream. They pass with the title to the property, and are the same whether the property is owned by a natural or an artificial person. The rights are not dependent upon the uses made of the property, or the purposes for which it is held. The fact that the property is held for public use, therefore, would not seem to affect the question of riparian rights. (C. & O. v. Walker, 100 Va. 69, 85, 40 S.E. 633 (1902)).

There may be a conveyance of water or water rights separate and apart from the land thereunder, and such a conveyance is a conveyance of a property right. (Thurston v. City of Portsmouth, 205 Va. 909, 140 S.E. 2d 678 (1965)).

Riparian owners have a right to a stream flowing through their lands in its natural condition, and may protect that right not only for present needs but for possible future ones. This interest cannot be taken for public use without making just compensation to the owner thereof. (Rankin v. Harrisonburg, 104 Va. 524, 52 S.E. 555 (1905)).

Where the rights of a riparian owner have been invaded, his remedies are, if he suffer substantial injury, first, by injunction, and second, by action for recovery of damages to the extent of his injury. (N. & W. v. Graham Land, etc., Co., 10 Va. Law Reg. 983 (1904)).

Application for injunction is the proper method to ascertain the rights of upper and lower mill owners to the use of the water power. (Hanna v. Clarke, 31 Gratt. 36 (1876)).

At common law the riparian owner, or owners, of the bed of a nonnavigable stream had, to the extent of his or their land, the exclusive right of fishery. No one else, without consent or permission, had the right to fish in the nonnavigable water. On the other hand, however, the riparian owner had no right to obstruct the passage of fish up or down stream. All the riparian owners, up or down stream, had the same, and equal, right to the enjoyment of the stream with all its advantages; and the natural run of the fish of passage is one of these advantages. (Crenshaw v. Slate River Co., 6 Rand. (27 Va.) 245 (271), at page 289 (262) (1828)).

GROUNDWATER

All subterranean waters which do not exist in a known and well defined channel are deemed percolating waters. All subterranean waters are presumed to be percolating waters until it is shown that they exist in a known and well defined channel. (H.H. Couch v. Clinchfield Coal Corporation, 148 Va. 455 (1927)).

Subsurface waters which merely percolate, ooze, or filter through the soil, and which do not flow in any permanent, distinct and definite channel, belong to the owner of the soil, and pass with it just as the rocks and ores beneath the surface pass. In the absence of malice or negligence, the owner may appropriate them to his own use, and if in so doing, such waters are diverted from the lands of the adjacent proprietor, it is damnum absque injuria. (Miller v. Black Rock Springs Improvement Co., 99 Va. 747, 40 S.E. 27, 86 Am. St. Rep. 924 (1901)).

The common law regarded the fee simple owner of the land as the owner of everything above and below the surface from the sky to the center of the earth, as expressed in the maxim, "Cujus est solum, ejus est usque ad coelum et ad inferos." This doctrine is adhered to in England. Under this doctrine, the owner of the land may make any use he pleases of underlying percolating waters, and may even cut them off maliciously without liability to his neighbors. (Clinchfield Coal Corporation v. Compton, 148 Va. 437, 139 S.E. 308, 55 A.L.R. 1376 (1927)).

The earlier American cases followed the common law doctrine, but the trend of modern opinion is in favor of the "reasonable use" rule which has come to be called the American rule. The "reasonable use" rule does not forbid the use of the percolating water for all purposes properly connected with the use, enjoyment and development of the land itself, but it does forbid maliciously cutting it off, its unnecessary waste, or withdrawal for sale or distribution for uses not connected with the beneficial enjoyment or ownership of the land from which it is taken. (Clinchfield Coal Corporation v. Compton, 148 Va. 437, 139 S.E. 308, 55 A.L.R. 1376 (1927)).

The owner of land who explores for and produces subterranean percolating water within the boundary of his land is limited to the reasonable and beneficial use of such water, when to otherwise use it would deplete the water supply of a valuable natural spring of another on adjoining or neighboring land, and thereby materially injure or destroy such spring. (Pence et al v. Carney et al, Sup. Ct. of Appeals of W. Va. 58 W. Va. 296, 52 S.E. 702 (1905)).

If the waters of a spring flow by a definite, marked channel to a point where they sink and disappear, and thence by a subterranean channel under a slight elevation or ridge to a mountain hollow,

reappearing there in such fashion that they can be identified, and thence proceed by a natural flow in the hollow to the land of an adjointing landowner, the owner of the spring would be entitled to such portion only of the water of the spring as would be necessary for the reasonable use and purposes of the tract on which the spring was located, and could not dispose of or interfere with the natural flow of the surplus. If the waters of the spring disappear wholly on the owner's land, and do not reappear in the mountain hollow below the slight elevation or ridge, save in the form of seepages in the hollow, resulting from percolations through the soil, or if the waters that run in the hollow cannot be identified with the spring waters which disappear before the slight ridge or elevation is reached, then the owner of the spring would be entitled to dispose at will of the waters of the spring. (C.T. Heninger v. A.M. McGinnis and others, 131 Va. 70 (1921)).

A landowner is within his rights in digging a ditch on his own land to procure water for his own use, although percolating water was thereby diverted from his neighbor's land. (Miller v. Black Rock Spring Improvement Co., 99 Va. 747, 40 S.E. 27, 86 Am. St. Rep. 924 (1901)).

A person may lawfully dig a well on his own ground although he thereby destroys the subterranean undefined sources of his neighbor's spring. (Couch v. Clinchfield Coal Corp., 148 Va. 455, 139 S.E. 314 (1927)).

III - STATUTORY RIGHTS, POWERS, AND RESPONSIBILITIES

The laws of Virginia which have been passed by the General Assembly and which are of general nature (not special acts such as municipal charters) are included in the Code of Virginia. The latest revision of the Code is dated 1950 but supplements to each of the ten volumes are published as necessary, normally after each regular session of the General Assembly.

Included in the following paragraphs is the subject matter of the sections of the Code which pertain to water resources. These subjects, together with the appropriate section numbers shown in parentheses, have been arranged according to the individual, agency, or governing body having the authority, the right, or the responsibility indicated.

INDIVIDUALS

In general, the property of owners of riparian land extends to the ordinary low water mark of the bays, rivers, creeks, and shores on which it is situated (62.1-2).

An owner of land may capture and impound diffused surface waters present on his property (62.1-105).

It is possible for riparian owners desiring to impound water in watercourses to secure, from a circuit or corporation court, legal clearance for so doing before investing the funds necessary to build a dam (62.1-107 to 62.1-115).

A person having on his land a watercourse on which he is proposing to build a water mill, or other machine, manufactory, or engine, and desiring leave to erect a dam across a watercourse for its operation, may apply for such leave to the circuit court (62.1-116). No proceeding on such application shall bar certain prosecutions which could have been maintained before enactment of the law (62.1-127). Nor does leave to erect such a dam authorize an adverse effect on any vested right in any existing water works (62.1-124).

Five or more citizens of any county, city, or town may complain to the circuit court setting forth the existence of a public nuisance and a special grand jury will be summoned (48-1).

It is a misdemeanor to injure a water reservoir or water apparatus used in the processing or sale of water (18.1-158).

Owners of unused flowing artesian wells are required to cap them (10-117.1). Drillers of certain wells are directed to supply

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to the State Geologist such information, including data pertaining to water, concerning the results of the operation as may be requested by him (10-98). Before abandoning it, persons causing a well or pit to be dug shall fill it with earth (18.1-73). Wells larger than six inches in diameter and more than ten feet deep shall be kept covered so as not to be dangerous to humans, animals, or fowls (18.1-74).

Poisoning, or attempting to poison, a drinking water supply is a punishable offense (18.1-64). Several of the "Miscellaneous Offenses" in Chapter 20 of Title 62.1 affect water. One pertains to the felling of timber or casting wood into a stream and to the casting of dead animals or other offensive refuse into certain waters (62.1-194). Some dams are prevented from obstructing navigation or the passage of fish (62.1-194.2). The discharge of oil from vessels may be regulated (62.1-195).

With minor exceptions, exclusive right to use a creek, cove, or inlet for sowing and planting oysters or other shellfish is granted to the owner of other lawful occupant of land provided such waters are within the limits of the property boundaries (28.1-116). Holders of oyster ground rented from the State may erect oystering facilities provided there is no obstruction of navigation or injury of private rights (28.1-117). Also a landowner who is not a lessee or riparian holder of suitable bottoms for the purpose may secure enough of the oyster grounds held by another to permit the erection of a bulkhead or wharf or the opening of a channel to reach navigable depth (28.1-118). Owners of riparian rights have the exclusive privilege of licensing and erecting blinds on their shore line (29-85).

Trespass or encroachment on subaqueous beds owned by the Commonwealth is a misdemeanor (62.1-3).

Any person desiring to drain his lands through the lands of others may apply to the circuit court, or corporation court, which may grant the leave requested under prescribed conditions (21-428 to 21-432).

Before establishing a water supply to serve three or more connections, and before extending one, the person proposing to do so is required to notify both the State Board of Health and the governing body of the county in which the water supply system is to be located (15.1-341).

SOIL AND WATER CONSERVATION DISTRICTS

Some of the many subjects of interest and concern to the Supervisors of Soil and Water Conservation Districts pertain to flood

water damage and the agricultural phases of water. Among the powers of these Supervisors in such matters are the conducting of surveys, investigations, and research (21-54); the conducting of demonstration projects (21-55); the carrying out of preventive and control measures (21-56); the developing of comprehensive programs and plans (21-61); and the constructing, operating, and maintaining of structures required for authorized operations (21-60). Small watershed improvement districts may be established within Soil and Water Conservation Districts, by following prescribed procedures, when it is found that they will be beneficial (21-112.1 to 21-112.21). The Board of Supervisors of a county may expend funds for watershed projects (15.1-10).

SANITARY DISTRICTS

Under the laws authorizing the creation of a sanitary district the circuit court may receive a petition from qualified voters within an area and, after proper notice and hearing, may grant the petition. The affected area is described by metes and bounds and, after its creation, the powers and duties of the governing body include those incident to the construction, maintenance, and operation of water supply, sewerage, garbage removal and disposal, heat, light, fire fighting equipment, power and gas systems, and sidewalks for the use and benefit of the public in the district (21-113 to 21-140.2; 15.1-776; 15.1-787; 15.1-791).

WATER AND SEWER AUTHORITIES

Upon completion of certain requirements by the governing body of a political subdivision, or the governing bodies of two or more political subdivisions and the State Corporation Commission, a certificate of incorporation or charter shall be issued and such issuance shall create and establish a water or sewer authority to exercise certain powers (15.1-1245; 15.1-1246). Among the powers of each such authority is one to acquire, purchase, lease as lessee, construct, reconstruct, improve, extend, operate and maintain any water system, sewer system, or sewage disposal system, or a garbage and refuse collection and disposal system or any combination of such systems (15.1-1250). However, water and sewer businesses may also be organized by other businesses (13.1-50).

PUBLIC FACILITIES DISTRICTS

The law authorizing the creation of public facilities districts only applies to certain counties and cities. Such a district is similar to a sanitary district but the governing body of a public facilities district has greater powers than does the governing body of a sanitary district (21-427; 21-427.1).

SANITATION DISTRICTS

Upon presentation of a petition and after appropriate notice and hearing, a circuit court or a corporation court, with the approval of the State Health Commissioner, may authorize the creation of a sanitation district and designate the territory to be included. There are two laws for this purpose: the Sanitation Districts Law of 1938, and the Sanitation Districts Law of 1946. The earlier law applies to tidal waters and the 1946 law applies to non-tidal waters. Though there are certain administrative differences, both have the same purpose, which "shall be the relief" of the appropriate waters "of the district from pollution, and the consequent improvement of conditions affecting the public health" and, in the 1938, law, "the natural oyster beds, rocks and shoals" (21-141 to 21-290).

DRAINAGE DISTRICTS

The General Assembly has declared that the drainage of the surface water from wet agricultural lands is essential for the successful cultivation of such lands and the prosperity of the community, and that the reclamation of overflowed swamps and tidal marshes shall be considered a public benefit and conducive to public health, convenience, utility, and welfare. In keeping with that declaration, the General Assembly has enacted permissive legislation under which, upon receipt of a proper petition and after the prescribed investigations, a circuit court may establish a drainage district (project) and locate and establish levees, drains, or canals. The circuit court may also cause to be constructed, straightened, widened or deepened any land drainage, ditch, drain or watercourse, and have built levees or embankments, as well as tide gates and pumping plants, for the purpose of draining and reclaiming wet, swamp, or overflow lands (21-292 to 21-426).

COUNTIES, CITIES, AND TOWNS

Charters are granted by the General Assembly to municipalities from time to time and changes in these charters are made as need therefor arises. In their respective charters, either directly or by specific reference to the Code, municipalities are given power to do those things necessary for their operation. These powers include the steps necessary to insure an adequate supply of water (15.1-837 to 15.1-914).

In addition to charters, there are provisions of the Code which give to political subdivisions certain rights, powers, and responsibilities with respect to water resources and related matters.

Counties, cities, and towns are empowered and authorized to enter on any lands, waters, and premises for the purpose of making surveys, borings, soundings, or examinations in connection with any project (15.1-175).

A city, and some counties, may acquire, own, and operate their own plant, machinery, and equipment for supplying water, light, power, and fuel and to that end may acquire any plant existing in or near the city (15.1-107; 15.1-292; 15.1-335; 15.1339).

In addition to the general legislation giving to the boards of supervisors of certain counties the same powers and authority as the councils of cities and towns (15.1-2, 15.1-204), and authorizing certain counties and towns to expend general funds to provide sources of public water supply (15.1-37, 15.1-37.1), the General Assembly has passed enabling acts which are important to water supply and related matters in counties.

The board of supervisors of any county may declare a stream in the county to be a lawful fence (8-880); may establish and maintain public sewers and public water mains along the streets, alleys, and public highways in any incorporated town, village, or suburbs of any city when necessary to protect public health (15.1-300); may expend funds for watershed projects (15.1-10); may construct, maintain, and operate water supply, sewerage, garbage removal and disposal, heat, light, fire fighting equipment, power and gas systems, and sidewalks for the use and benefit of the public in a sanitary district after the creation of the district (12-118; 21-118.4; 15.1-776; 15.1-787; 15.1-791); (NOTE: The Public Facilities District Law gives wider authority to selected counties (21-427).); and, in those counties in which sanitary districts have been established, may construct, maintain, and operate parks, recreation areas, and swimming pools (15.1-278).

Either alone or together with the governing bodies of other political subdivisions, a board of supervisors may signify its intention to create a water authority or a sewer authority empowered, among other acts, to acquire, construct, maintain, and operate water systems and sewer systems. In connection with this intention public hearings and the filing of articles or incorporation with the State Corporation Commission are required (15.1-1241, 15.1-1243; 15.1-1245; 15.1-1250). Also the board of supervisors may enter into contracts or agreements with the governing bodies of other counties, cities or towns for the acquisition, construction, maintenance, and operation of sewer systems (15.1-318) and may provide against and prevent the pollution of water in the county whereby it is rendered dangerous to the health of persons (15.1-504, 15.1-505, 15.1-510). Governing bodies may require that there be fences around swimming pools (15.1-29).

A board of supervisors may adopt resolutions, as may the governing bodies of cities and towns, joining in petitions for the creation of a proposed sanitation district for the relief of the waters of the district from pollution and the consequent improvement of conditions affecting the public health (21-153; 21-169; 21-236; 21-249). The 1960 act relating to the Hampton Roads Sanitation District is incorporated in the Code by reference (21-291.2).

Funds for drainage districts may be appropriated by boards of supervisors (21-426).

Any county, city, town, or the Department of Highways, or the Department of Conservation and Economic Development has the right by eminent domain to acquire any right or interest in and to any oyster grounds necessary for the purposes of such county, city, town, or department (28.1-115).

Counties, cities, and towns may establish, maintain, and operate airports and landing areas over and upon any public waters of the State or any submerged land under such public waters, within certain limits (5-26).

Any county, city, or town is authorized to provide for adequate drainage of any and all areas within their boundaries (15.1-283) and may construct a dam, levee, sea wall, or other structure to prevent flooding by all waters (15.1-31). They also may provide for floodplain zoning (15.1-430; 15.1-486; 15.1-489; 15.1-490).

The governing body of any county, city, or town may agree to the fulfillment of the requirements for local cooperation necessary to the accomplishment of river and harbor or flood control projects of the United States, as expressed in official Federal documents, provided the project will accrue to the general or special benefit of such county, city, or town (62.1-148 to 62.1-152; 62.1-155 to 62.1-158).

Certain political subdivisions are authorized to perform various duties and enforce specified harbor regulations (62.1-163).

Upon certification by the applicant that free labor is unavailable for the purpose, and upon satisfying other specified conditions, any political subdivision or agency of the State may make application to the Director of Welfare and Institutions for the labor of convicts for the purpose of reforestation, soil erosion control, water conservation, and the construction of public recreational areas (53-19.1 to 53-19.4).

No State highway or county road or stream, or watercourse, shall be altered, closed, or obstructed by any public service

corporation for certain purposes, until plans therefor shall be approved by the governing body of the political subdivision (56-32).

THE COMMONWEALTH

It has been established that any state may change the common law rule and permit the appropriation of the flowing waters for such purposes as it deems wise subject to two limitations. One of the limitations is the superior power of the Congress under the Commerce Clause of the Constitution. The other is incident to the riparian rights pertaining to Federally owned riparian property, which are the same as those pertaining to other riparian property. This authority has been exercised in Virginia in keeping with the changing needs. In addition to the enactment of specific legislation, the General Assembly has considered it appropriate to announce certain policies concerning water resources.

All beds of the bays, rivers, creeks, and the shores of the sea, not conveyed by special grant or compact, shall remain the property of the Commonwealth (62.1-1). The General Assembly has established the jurisdiction and ownership of the Commonwealth over offshore waters along the Virginia coasts and the lands lying thereunder (7.1-2).

The conditional consent of the Commonwealth has been given to the acquisition by the United States, or under its authority, of any lands in Virginia, whether under water or not, for sites for specified purposes (7.1-17), for the conservation of the forests or natural resources, for the improvement of rivers and harbors, and for any other proper purpose (7.1-15).

Whatever power is reserved to the General Assembly by an act heretofore passed, to abate or remove any dam or other works in a watercourse, or improve its navigation, shall continue in full force. In no case shall the right of the State (or of any company incorporated for opening, improving, or extending the navigation of any watercourse) to preference in the use of the water flowing therein for the purposes of such navigation be affected by any order of court, which, since April 1, 1816, has been made, or hereafter may be made, granting leave to any person to erect a dam or other obstruction across or in such watercourse (62.1-7).

In the State Water Control Law on pollution abatement, it is stated that "the right and control of the State in and over all State waters is hereby expressly reserved and reaffirmed" (62.1-16).

Again, in 1954, after declaring water a natural resource which

should be regulated by the State, the General Assembly said "the regulation, control, development and use of waters for all purposes beneficial to the public are within the jurisdiction of the State which in the exercise of its police powers may establish measures to effectuate the proper and comprehensive utilization and protection of such waters" (62.1-11).

In the 1928 legislation on water power development the following policy statement was made: "In order to conserve and utilize the otherwise wasted energy from the water powers in this State, it is hereby declared to be the policy of the State to encourage the utilization of the water resources in the State to the greatest practicable extent and to control the waters of the State . . . and also the construction or reconstruction of a dam in any rivers or streams within the State for the generation of hydroelectric energy for use or sale in public service . . . ." (62.1-80).

Also, in the Soil and Water Conservation Districts Law, "It is hereby declared to be the policy of the legislature to provide for the conservation of the soil and soil resources of this State, and for the control and prevention of soil erosion, and for the prevention of flood water and sediment damages, and for furthering agricultural phases of the conservation, development, utilization, and disposal of water, and thereby to preserve natural resources, control floods, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife, protect the tax base, protect public lands, and protect and promote the health, safety, and general welfare of the people of this State" (21-2).

The Constitution of Virginia, a restraining instrument, provides in Section 63 that the General Assembly shall not enact any local, special, or private law "declaring streams navigable, or authorizing the construction of booms or dams therein, or the removal of obstructions therefrom."

THE GOVERNOR

There are only a few places in the Code where the Governor is charged directly with matters relating to water resources. He controls, and may make regulations concerning underwater and other lands of the Commonwealth (41-8; 62.1-1) and is authorized to convey or lease to the United States certain sites, none of which is larger than ten acres, to be used for aids to navigation (7.1-14). Under certain conditions he may convey to the United States title to or easement across specified waste, unappropriated, and marsh lands (7.1-20).

The Governor appoints the five members of the board or commission created to manage a sanitation district established in tidal waters (21-157), the three members of the Potomac River Basin Commission of Virginia (62.1-66; 66.2-67, and the three Virginia members of the Ohio River Valley Water Sanitation Commission (62.1-73).

He appoints the twelve members of the Board of Conservation and Economic Development.

The consent and approval of the Governor is required in order for the Attorney General of Virginia to lease or grant easements in the beds of certain waters within the jurisdiction of the State (62.1-3).

STATE CORPORATION COMMISSION

The control and regulation of the development of the waters of the State under the Water Power Act is vested in the State Corporation Commission which licenses the construction and use of dams for generating hydroelectric energy (62.1-82; 62.1-83).

The Commission issues certificates of incorporation for water authorities and sewer authorities (15.1-1246). Upon receipt of a proper petition the Commission investigates the suitability of a sewerage or water system to meet the reasonable domestic needs of the persons or properties served (56-265.11). It also enforces requirements concerning the location of installations, such as railroad bridges and overhead wires, so as not to obstruct the navigation of any watercourse or impair or endanger its use by anyone entitled to such use (56-32; 56-362; 56-466).

Before the fifteenth day of April each year the State Corporation Commission receives a report from each public service corporation in the State which is in the business of furnishing water or heat, or light and power, listing all of its property as of the first day of the preceeding January (58-607). It regulates the rates and services of such companies (56-232 to 56-249) and orders priorities in times of shortage (56-250).

COURTS

A circuit court may, by itself or in conjunction with other circuit courts, contract for clearing watercourses of obstructions (62.1-6). It may establish a stream or a canal as a lawful fence (8-870). Upon proper petition and after a public hearing it may create a sanitary district (21-113; 21-114) and may establish a drainage district, and courts of cities may establish drainage

projects (21-292). A circuit court or a corporation court may grant leave for a person to drain his lands through the land of others (21-428). Either may grant leave to establish a ferry (33-176). An obstruction to navigation caused by a wharf, pier, or bulkhead may be abated by a circuit court (6211-164). Circuit courts may grant or withhold leave to an individual to build a dam in watercourse upon his own or another's property or dig a canal (62.1-116). There are limitations on the power of courts to grant leave to erect dams (62.1-8).

Circuit courts and corporation courts may accept petitions, make orders, hold hearings, and perform functions with respect to the creation of sanitation districts (21-144; 21-227) and, after investigation, may approve or reject an application for leave to store flood waters in watercourses (62.1-111).

Upon a complaint from five or more citizens, a circuit court summons a special grand jury to investigate the existence of a public or common nuisance (48-1).

Concurrent jurisdiction over designated portions of waters between political subdivisions has been granted to courts not of record (16.1-35; 17-1).

DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

The Director of Conservation and Economic Development is the head and chief executive officer of the Department (10-1). The Board of Conservation and Economic Development consists of twelve members appointed by the Governor (10-3), and it is given additional powers and duties relative to Virginia's water resources (10-17.1-10-17.9). It formulates water resources policy and objectives based upon investigation, study, existing legal concepts, and upon recommendations of the Division of Water Resources to which it assigns such duties. It cooperates with private, State and Federal agencies in multiple-purpose planning for the development of Virginia's water resources. It establishes within the Department certain divisions, two of which are the Division of Water Resources and the Division of Mineral Resources (10-8.1).

Relative to water resources, it is charged with producing comprehensive river basin reports, policy formulation, furnishing technical advice and representing the State in interstate and Federal matters, but is prohibited from initiation of works of improvement (10-17.1 to 10-17.9).

The Director is charged with enforcement of the law pertaining to the capping of unused flowing artesian wells (10-117.1).

Under the provisions of a letter dated November 26, 1945, from

the Governor to the Director, he acts as the Governor's representative in the preparation of comments on flood control and navigation projects referred by the Chief of Engineers, U.S. Army, for that purpose prior to their submission to the Congress for action. The Department is authorized to exercise the right of eminent domain against certain oyster bottoms for navigational improvements in certain cases (28.1-115).

The Department of Conservation and Economic Development grants or denies requests to impound water along with other responsibilities with respect to reclamation of strip-mined areas. (45.1-164)

Normally, the water resources functions of the Director are performed by the Commissioner of Water Resources.

DIVISION OF WATER RESOURCES

Acting for the Director of Conservation and Economic Development, the Commissioner of Water Resources gathers and disseminates information relative to the water power and industrial advantages and resources of the State, and opportunities for industrial enterprises or commercial power plants; promotes the development and utilization of the water power and other resources of the State, seeks investors and the establishment of manufactories or other enterprises within the state; and cooperates with state, Federal, and private agencies for the utilization of the natural resources of the State (10-116).

For the purpose of investigating the water power and industrial interests and resources a comprehensive water power survey is authorized and directed. It is contemplated that, in the making of such surveys, there will be cooperation with other State agencies as well as with similar agencies of the Federal government whenever a suitable and satisfactory arrangement can be made for such cooperation (10-117). The results of investigatory studies are published in bulletins.

All evidence which is taken with reference to conserving the water supply of the State is preserved and a report, including conclusions and recommendations, is made to each session of the General Assembly. From time to time matters of interest are published for public distribution (10-115).

Under the provisions of the law authorizing the impoundment of surface waters, the Commissioner of Water Resources is required to provide the appropriate court with certain technical information and comments (62.1-109). He also acts for the Director of Conservation and Economic Development in matters pertaining to the provisions of the well-capping law (10-117.1).

Studies and proposals made by officers of the U.S. Army Corps of Engineers, for flood control and navigation projects within or affecting Virginia are reviewed by the Commissioner who prepares comments thereon for the signature of the Director.

DIVISION OF MINERAL RESOURCES

The Commissioner of Mineral Resources has responsibilities in the field of water resources in that he prescribes what information is to be furnished by drillers of wells (10-98).

He also is charged with arranging with the proper Federal officials for cooperation in topographic mapping (10-93).

VIRGINIA STATE PORTS AUTHORITY

The Board of Commissioners of the Virginia State Ports Authority consists of seven members appointed by the Governor (62.1-129). As a body corporate, it has many powers concerning the operation of ports, all of which pertain to the proper use of navigable waters. It uses its efforts to effect port coordination and to promote cooperation among the political subdivision having interests in them; initiates and furthers plans for the development of the ports of the State; encourages and facilitates the creation of boards of local port commissioners; and seeks to secure the improvement of navigable tidal waters (62.1-133).

VIRGINIA AIRPORTS AUTHORITY

As a political subdivision of the State, the Virginia Airports Authority, has among others the power "to establish or acquire and maintain airports in, over and upon any public waters of this State or any submerged lands under such public waters . . . ." (5-49). Its governing body consists of five persons from different areas of the State, appointed by the Governor, and a member of the State Corporation Commission (5-48).

STATE WATER CONTROL BOARD

The five members of the State Water Control Board are appointed by the Governor (62.1-20). They exercise general supervision over the administration and enforcement of the Water Control Law and all rules, regulations, and specified orders promulgated under that law. The purposes of the law are to safeguard the clean waters of the State from pollution, prevent any increase in pollution, and reduce existing pollution (62.1-14; 62.1-27). Among its other duties, the Board is authorized and directed to study all problems concerned

with pollution and its prevention, to establish standards of quality for waters, to conduct research, to issue certificates, and to issue directives (62.1-14).

It issues a certified statement as to the effect on pollution abatement of a proposed impoundment of flood waters (62.1-109).

DEPARTMENT OF HEALTH

The State Board of Health has general supervision and control over all water supplies and waterworks in the State insofar as the sanitary and physical quality of waters furnished may affect the public health of comfort (62.1-46; 15.1-341). A public water supply is one that serves at least 25 persons or, in the case of residential consumers, more than 15 connections (61.1-45). The State Board of Health is charged with examining water supplies, advising authorities when requested concerning water supply, issuing permits for supplying water for domestic purposes, and requiring changes in the source of supply or other alterations deemed necessary (62.1-48 to 62.1-56). The State Health Commissioner appoints (for various terms) the seven members of each commission created to manage a sanitation district in non-tidal waters (21-237).

MARINE RESOURCES COMMISSION

The Marine Resources Commission has jurisdiction over commercial fishing in tidal waters (28.1-3; 28.1-23 to 28.1-36), and authority concerning encroachment upon subaqueous bottoms (62.1-3; 62.1-4). The Commissioner of Marine Resources files maps of oyster grounds in the office of the clerk in the county concerned, assigns oyster-planting grounds to riparian owners, licenses bathing areas in some cases, and sells materials from subaqueous bottoms (28.1-107; 28.1-108; 28.1-118.1; 28.1-94.1). The Governor, under prescribed conditions, may consent on behalf of the Commonwealth, to new dredging of a ship channel in navigable streams and near seed oyster beds in James River (28.1-147). Oyster culture and fishing are regulated to prevent impingement upon navigation (28.1-109 (1); 28.1-109 (18); 28.1-117; 28.1-53). Notice is given to an oyster ground lessee before navigation improvements are made on his lease (28.1-118).

COMMISSION OF GAME AND INLAND FISHERIES

Some of the numerous responsibilities of the Commission of Game and Inland Fisheries affect water resources. It is authorized to control hunting and fishing rights in and on all impounded water areas resulting from power development and to establish refuges, sanctuaries, and public shooting and fishing reserves in such areas

(29-12). It controls hunting and fishing on waters owned by the Commission (29-130.1). It controls certain subaqueous lands in order to prevent practices which would be harmful to fish or wildlife (62.1-5). It is also responsible for administering the provisions concerning motorboats and water safety (62.1-166 to 62.1-186) and the law pertaining to fish ladders at dams and for making the necessary inspections of certain dams (29-151).

STATE HIGHWAY COMMISSION

Some of the functions of the State Highway Commission affect the water resources of the Commonwealth. The Commission may acquire ferries, and the necessary facilities, which form connecting links in highways and may grant or withhold permission to erect certain bridges over navigable waters (33-209; 33-221). Upon application the Commission may permit highway fills to be used as dams (53-123.1).

The State Highway Commissioner has the right to acquire such rights in oyster grounds as may be necessary and may take, or authorize the taking of, road materials from waters in which title to the bed is in the Commonwealth (28.1-115; 33-69). He also acts on plans of public service corporations for the alteration, closing, or obstruction of a highway or a stream (56-32).

SOIL AND WATER CONSERVATION COMMISSION

The State Soil and Water Conservation Commission performs the functions conferred upon it in the Soil and Water Conservation Districts Law. It is composed of not less than 11 and not more than 12 members some of whom are appointed by the Governor and some of whom are members ex-officio. This Commission cooperates with State and Federal agencies, assists in the organization of soil and water conservation districts, aids the supervisors of such districts in the execution of their programs, disseminates information, coordinates the efforts of the various districts, and encourages the practices of soil and water conservation (21-6; 21-10).

It receives from the supervisors of the affected district certification of the organization of small watershed improvement districts (21-112.6).

Applications for improvements under the provisions of the Watershed Protection and Flood Prevention Act (Public Law 566) are acted on for the Commonwealth by the State Soil and Water Conservation Commission before they are forwarded to the U.S. Department of Agriculture.

INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

This body consists of three representatives each from the states of Maryland, Pennsylvania, Virginia, West Virginia, the District of Columbia, and the United States. It exists due to a compact entered into for the creation of the Potomac Valley Conservancy District, consisting of the drainage area of the Potomac River and its tributaries, in an effort to coordinate and expedite the abatement of pollution in the streams of that District. (62.1-64; 62.1-65). It collects and disseminates information, cooperates with appropriate agencies, and makes pertinent recommendations (62.1-69).

Virginia's three representatives, appointed by the Governor, constitute the Potomac River Basin Commission of Virginia (62.1-66; 62.1-67).

OHIO RIVER VALLEY WATER SANITATION COMMISSION

The Ohio River Valley Sanitation District was created by a compact between the affected states entered into for the purpose of abating existing pollution and controlling future pollution of the streams in the Ohio drainage basin (62.1-71). Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia are the signatory states. The Ohio River Valley Water Sanitation Commission consists of three commissioners from each state and three representing the United States government. Additional state representation is provided by membership on committees.

This Commission has greater power than that for the Potomac River in that, in addition to functions which are similar, it may issue orders concerning the abatement of pollution to offending municipalities, corporations, or persons (62.1-74).

The three commissioners from Virginia are appointed by the Governor, subject to confirmation by the General Assembly, from the membership of the State Water Control Board (62.1-73).

DISTRICT OF COLUMBIA

Prepared by

District of Columbia
Department of Sanitary Engineering
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DISTRICT OF COLUMBIA

I - LAW

AUTHORITIES

The major waterways of the District of Columbia consists of that portion of the Potomac River flowing past the length of the District, and the Potomac tributaries of Rock Creek and the Anacostia River (formerly called the Eastern Branch). Substantial portions of the Potomac and Anacostia are navigable; Rock Creek is not. All three, however, are interstate streams within the meaning of the Federal Water Pollution Control Act, as amended (70 Stat. 498; 33 U.S.C. 466). (Rock Creek rises in Montgomery County, Maryland, and the Anacostia in Prince Georges and Montgomery Counties, Maryland).

As in the case of Maryland, the boundary line of the Potomac in the District is the low water mark on the Virginia shore opposite, and not to the thread of the stream as is usually the case. (Marine R. and Coal Company v. United States, 257 U.S. 47 (1921); D.C. Code, Section 1-101). Rock Creek Park within the District, through which Rock Creek flows to the Potomac, is under the jurisdiction of the National Park Service, National Capital Area. Anacostia Park, which includes the Anacostia River for most of its distance in the District, is likewise under the same jurisdiction, as is Potomac Park, which borders the greater part of the Potomac in the District.

In view of the foregoing, and considering the fact that the District touches on only about ten or twelve miles of the Potomac, which has an over-all length of about 385 miles, it can be readily seen that the District, in dealing with water pollution control within its borders, must rely largely on the strength of Federal statutes and regulations affecting interstate waters; on the cooperation of Federal, state, and regional and local government agencies; and on interstate compacts, regional agreements or other voluntary local agreements.

Water resources control in the District is governed basically by Federal Statutes made applicable to the District, namely; the Federal Water Pollution Control Act, as amended, and the Water Resources Planning Act. In addition, Congress has enacted the following assistance programs to aid in the development of comprehensive city demonstration projects which include grants for water resource control projects: Demonstration Cities and Metropolitan Development Act, 80 Stat. 1255 (1966); Public Works and Economic Development Act, 79 Stat. 552 (1965), 42 U.S.C. 3131-3226; and Housing and Urban Development Act, 79 Stat. 451 (1965). These Federal statutes, with associated measures for flood control, water supply, soil conservation, and recreational and watershed development, contain the legislative authority for the massive

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programs for restoration and preservation of America's water resources.

Certain acts of Congress applicable locally in the District (found in the D.C. Code and in the U.S. Statutes at Large) deal to some extent with water resources.

Constitution. Article I, Section 8, Clause 17 of the United States Constitution grants Congress exclusive and plenary power to legislate for the District of Columbia. The commerce clause (U.S. Constitution, Article I, Section 8, Clause 3), being an express limitation solely upon the states, constitutes no bar to legislation by Congress regarding the District of Columbia.

The District of Columbia does not possess sovereign powers. It is a municipal corporation bearing generally the same relation to Congress that a city bears to the state in which it is incorporated. However, Congress may delegate legislative authority over municipal matters to the District government. District of Columbia v. John R. Thompson Company, 346 U.S. 100 (1953).

The present form of government for the District of Columbia was created by Reorganization Plan No. 3 of 1967. It consists of a Commissioner, who is executive head of the government, and a Council, composed of nine members, which is the legislative body with authority to promulgate regulations in areas designated by the Plan. Congress, however, retains ultimate legislative control over the District. The Commissioner-Council form of government, which began functioning on November 3, 1967, replaced the former three-member Board of Commissioners established in 1874.

Statutes.

(1) Act of August 31, 1852, 10 Stat. 92. Appropriates funds to enable the President of the United States to have a study made to determine the water needs of the cities of Washington and Georgetown.

(2) Act of March 3, 1853, 10 Stat. 206. Appropriates funds for development of a system of water supply for the City of Washington, and requires that if water is to be drawn from any source within the State of Maryland, the assent of the legislature of that State first be obtained. (Act of May 3, 1853, Laws of Maryland, Chapter 179, provides for the consent of the State of Maryland for the United States to purchase lands, construct dams, reservoirs, buildings, and other works and to exercise jurisdiction concurrently with the State of Maryland over such lands and facilities for the purpose of supplying water for the City of Washington).

(3) Act of March 2, 1855, 10 Stat. 633. Authorizes the Corporation of Georgetown to introduce into said town a supply of water.

(4) Act of March 3, 1859, 11 Stat. 435. Places the control of the Washington Aqueduct under the U.S. Army Corps of Engineers and allows Washington and Georgetown to use water from the United States system.

(5) Act of May 21, 1862, 12 Stat. 405. Authorizes the District of Columbia and Georgetown to levy and collect a water tax.

(6) Act of March 3, 1863, 12 Stat. 804. Relates to the care and preservation of works constructed by the United States for bringing the Potomac waters to Washington and Georgetown.

(7) Organic Act of 1878, 20 Stat. 102. Commission form of government for the District is authorized.

(8) Act of July 1, 1882, 22 Stat. 135, 143. Places the D.C. Water Department under the Engineer's Office of the District government.

(9) Act of July 15, 1882, 22 Stat. 168. Authorizes an increase in the water supply for the City of Washington, and the development of a dam on the Potomac River at Great Falls.

(10) Act of February 11, 1895, 28 Stat. 650. Georgetown is absorbed by the City of Washington.

(11) District of Columbia Appropriation Act, 1942, 55 Stat. 499, 536. Authorized the development of a plan to insure an adequate future water supply for the District of Columbia.

(12) Section 1-101, D.C. Code. Establishes the territorial area of the District of Columbia, including the Potomac River.

(13) Section 1-226, D.C. Code. Authorizes the promulgation of municipal regulations necessary for the protection of the health and comfort of persons and the protection of property.

(14) Section 1-725, D.C. Code. Authorizes the promulgation of regulations relating to plumbing and sewers.

(15) Sections 1-817 and 1-817c, D.C. Code. Commissioner authorized to enter into agreements with the States of Maryland and Virginia to protect the Potomac River and its tributaries from pollution by sewage originating in those neighboring states.

(16) Section 4-106, D.C. Code. Outlines duties of the Metropolitan Police Force, including the duty to enforce harbor regulations.

(17) Section 8-108, D.C. Code. Control of Park System, including much water frontage, is placed under the National Park Service, U.S. Department of the Interior.

(18) Section 8-157, D.C. Code. Authorizes issuance of licenses for boathouses on banks of the Potomac Park tidal reservoir.

(19) Section 8-164, D.C. Code. Authorizes acceptance of the Theodore Roosevelt Island in the Potomac River by National Park Service for maintenance and development.

(20) Sections 9-101 and 9-102, D.C. Code. Governs jurisdiction and control of wharves.

(21) Section 10-135, D.C. Code. Exclusive control by the District government to regulate and operate municipal fish wharf and market.

(22) Section 16-1311, D.C. Code. Condemnation authorized whenever land in the District is needed for any municipal use authorized by Congress.

(23) Section 22-1701, D.C. Code. Authorizes the making of harbor regulations.

(24) Section 22-1702, D.C. Code. Prohibits the throwing or depositing of matter in the Potomac River.

(25) Section 22-1703, D.C. Code. Prohibits the deposit of deleterious matter in Rock Creek or the Potomac River.

(26) Section 22-3118, D.C. Code. Establishes penalities for maliciously making the water supply impure.

(27) Sections 43-1501 to 43-1541, D.C. Code. Relates to water supply generally in the District of Columbia. (Section 43-1530 and Section 43-1531 authorize contracts for delivery of water to nearby Maryland and Virginia communities. Section 43-1541 relates to water and services supplied to the United States Government).

(28) Sections 43-1620 to 43-1624, D.C. Code. Authorizes development of the Dulles International Airport Sanitary Sewer connecting with the District of Columbia system. This Potomac Interceptor is a 27 - mile trunk line connecting with the upstream areas of the Potomac.

(29) PL 91-650, District of Columbia Revenue Act of 1970: Title I increases the loaning limit for sewage works construction from $32,000,000 to $72,000,000; increases the loaning limit for water works construction from $35,000,000 to $51,000,000; and gives the District of Columbia government full authority to establish water and sewer service charges.

Title VII directs the Administrator of the Environmental Protection Agency, in consultation with the Secretary of the

Interior, the Chief of Engineers of the Corps of Engineers of the United States Army, and the Commissioner of the District of Columbia, to conduct a special study and make recommendations with respect to (1) water resources, water pollution, and sanitation problems in the Washington metropolitan area and (2) the establishment of an appropriate independent regional or area entity to control such problems and provide necessary services. The report was submitted to the Congress on April 30, 1971.

Municipal Regulations.

(1) Water Quality Criteria - Commissioners' Order No. 67-942, dated June 29, 1967, as amended by Commissioner's Order No. 67-1621, dated October 17, 1967 and Order of the Commissioner No. 68-801, dated December 16, 1968, establish water quality criteria for the Potomac River and tributaries within the District of Columbia and provide a plan for implementation and enforcement.

(2) Uses of water supply - Commissioners' Order No. 66-1444, dated August 20, 1966: Related to prohibition on uses of water taken from the District of Columbia water supply.

(3) Riparian rights and water privileges - Commissioners' Order No. 54-576, dated March 16, 1954: Relates to riparian boundaries and wharves.

Case Law.

(1) United States v. Groen, 72 F. Supp. 713 (D.C. 1947): Title to the Potomac River and its tributaries that flow within the District of Columbia, including the Anacostia River, and the soil beneath the natural high water mark, is vested in the United States for the benefit of the people.

(2) Dougherty v. Galliher, 58 U.S. App. D.C. 166, 26 F. 2d. 538 (1928): The District of Columbia government has no power to acquire land by condemnation, except by express authority of Congress.

Opinions of the Corporation Counsel.

(1) Opinion of June 22, 1967, relating to the authority of the Board of Commissioners to adopt water quality standards and enforce such standards as may be adopted.

(2) Opinion of June 30, 1964, relating to the right of the District of Columbia to the waters of the Potomac River for domestic uses.

WATER RIGHTS

Riparian Rights Doctrine. In the District of Columbia, there is recognition of the common-law rule that title to navigable

rivers, and the soil thereunder, is vested in the sovereign. An express grant of riparian rights to the owner of property adjacent to the river must be made with the consent of Congress unless such rights were granted by the State of Maryland prior to the succession of the land to the District of Columbia.

Congress has authorized the District government to establish riparian boundaries and license the building and maintaining of wharves which project into navigable water. (Section 9-101, D.C. Code). In determining the location of such boundaries, the District government must balance the conflicting interests of neighboring riparian owners and of the public, with due regard to existing structures. Martin v. Standard Oil Company, 91 U.S. App. D.C. 84, 198 F. 2d 523 (1952).

Riparian rights, in the District, include the right to the continued flow of the river in its natural state, and the common-law right to access to the navigable part of the river, including the right to build a wharf or pier, subject to such regulations as the District government prescribes for the protection of the public.

Diversion Between Basins. Not applicable.

Eminent Domain. The District of Columbia government has no power to acquire land by condemnation, except by express authority of Congress. Dougherty v. Galliher, 58 U.S. App. D.C. 166, 26 F. 2d 538 (1928).

Where power to condemn property for public use has been conferred on municipal officers, it rests with such officers to determine whether it shall be exercised, and when and to what extent it shall be exercised. So long as the District officials do not abuse the power delegated to them, courts are powerless to inquire into motives which actuate them or the propriety of the contemplated improvement. O'Hara v. District of Columbia, 79 U.S. App. D.C. 302, 147 F. 2d 146 (1945).

Surface Water. None.

Ground Water. None.

Access to Lakes and Streams. Authority for promulgating rules and regulations governing riparian rights and water privileges "in all waters within the jurisdiction of the Commissioner" (C.O. 54-576, 3/16/54) is conferred by Sections 9-101 and 9-102, D.C. Code. Under Section 9-101 such regulations cover "all wharves, piers, bulkheads, and structures thereon, and waters adjacent thereto within the pier lines, and all the basins, slips and docks, with the land under water, in said District." As provided by this section of the statute, the regulatory jurisdiction over such

facilities extends to all Federal, District, and private property in this category, except as to small tracts including Fort McNair (formerly the "War College") specified in the proviso of Section 9-101.

Jurisdiction covered by Section 9-101, with the exception cited, is therefore co-extensive with the jurisdiction conferred on the Commissioner by Section 22-1701, D.C. Code, to make harbor regulations, viz., "for the entire waterfront of the city within the District of Columbia."

Although the regulations on riparian rights and water privileges are concerned primarily with navigation and related property matters, the regulations sometime involve, either directly or incidentally, problems concerned with water resources.

REGULATORY AUTHORITY

Permits or Approvals Required.

(1) For drilling or abandoning wells. No permits are required for drilling a well. However, a permit is required to connect a well to a premises (Section 115-7 - Plumbing Code of the District of Columbia, 1967). There are no regulations governing the abandonment of wells.

(2) For impoundments. Not applicable to the District of Columbia.

(3) For channel encroachments. No permits or approvals are required by the District government. If it is assumed that the use of the word channel refers to the navigable channel, then any encroachment thereon would require a permit from the Corps of Engineers under Section 10 of the Rivers and Harbor Act of March 3, 1899.

(4) Development in flood plains. There are no permits or approvals required for any development in flood plainns.

(5) Discharge of wastes. All domestic and industrial waste is discharged to the municipal sewage system. These discharges are governed by the Plumbing Code and Police Regulations of the District of Columbia. For additional information on industrial waste, see the D.C. Code, The Police Regulations, and the D.C. Water Quality Standards, as approved by the Secretary of the Interior, January 17, 1969.

(6) Construction of public water supply. See "II - Administrative Structure, State Departments and Agencies, Department of Sanitary Engineering, and Washington Aqueduct."

Water Quality.

(1) Waste treatment. Regulatory authority: "Water Quality Criteria, Implementation and Enforcement Plan, District of Columbia, Potomac River and Tributaries," as revised and adopted by the District of Columbia Board of Commissioners on October 17, 1967 and by the Commissioner in Order of the Commissioner No. 68-801 of December 16, 1968.

(2) Flow regulation. None.

II - ADMINISTRATIVE STRUCTURE

The District of Columbia is unique among political jurisdictions in that it is the seat of the Federal government and the Nation's capital. The District government is legally a municipal corporation. It also, however, performs many functions of county and state governments as established by Federal law, and for certain purposes is treated as an agency of the Federal government. Because of the District's status as the Nation's Capital, Congress from time to time has delegated certain functions in part or in whole to Federal agencies which are normally performed by state or local agencies. Where water and related land resources are involved, the Federal activity has been incorporated in the following manner.

The officers of the District of Columbia consist of a Commissioner, Assistant to the Commissioner and a Council composed of the Chairman, Vice-Chairman and seven other members. These officers are appointed by the President of the United States, by and with the advice and consent of the Senate.

The Commissioner has executive and administrative responsibilities, including the authority to organize and manage the District government, to administer its programs and to prepare its budget, subject to review by the Council. He has the authority to establish subordinate agencies and offices and to effect transfer of funds between agencies as he may deem necessary. Budgets are submitted to the Federal Office of Management and Budget for review and final submission to the Congress of the United States for approval.

The District of Columbia Council exercises certain regulatory and other functions. Every action of the Council is subject to the veto of the Commissioner, which the Council can override by a three-fourths vote. The organization plan of the District of Columbia government is provided on Plate 1.

INTERSTATE

Interstate Commission on the Potomac River Basin. This compact commission is made up of three appointed members each from Maryland, Virginia, West Virginia, Pennsylvania, and the District of Columbia, and the United States Government. The Commission was created in 1941 by interstate compact as a public education, fact-finding, and coordinating body. Although it recommends water quality objectives and related standards for the Potomac River Basin to the signatory bodies, it does not have enforcement powers. The organization plan of the Commission is provided on Plate 2.

Potomac River Basin Advisory Committee. This Committee was

created in 1965 by the Governors of Maryland, West Virginia, Virginia, and Pennsylvania, and the Commissioners of the District of Columbia.

Comprised of three representatives from each of the States and the District of Columbia, the Committee was directed by the heads of government to coordinate the views of the several Basin jurisdictions on all significant matters pertaining to the Potomac, to convey these views to responsible Federal agencies and to advise at an early date on the best possible kind of permanent organization for the planning and development of the Potomac River.

On October 17, 1967, the Committee proposed a draft compact that would create a new Potomac River Basin Commission which would absorb the present Interstate Commission on the Potomac River Basin. While the emphasis of the draft compact is on achieving a basin-wide plan through coordination of state and local efforts, the Commission would be empowered, if necessary, to undertake projects and build facilities, including dams and treatment plants to increase water supply, curb pollution, provide hydroelectric power and flood control, and preserve historic and recreational areas. Following receipt of comments and suggestions, a final draft compact was submitted to the States and the Congress. As of June 1, 1971, Virginia and Maryland had approved the compact.

Federal Interdepartmental Task Force on the Potomac. As the result of a Presidential directive, dated February 8, 1965, this task force was established with representatives from the Department of the Interior, Department of the Army, Department of Agriculture, and the Department of Health, Education, and Welfare. Four working groups were organized consisting of representation from Federal bureaus and observers from related state activities for the purpose of preparing conservation plans for Landscape and Recreation; Soil Erosion and Sedimentation; Water Quality and Pollution Abatement; and Water Supply and Flood Control. The Task Force's report, "The Nation's River," was released in October 1968.

Metropolitan Washington Council of Governments. This Council is composed of representatives of Federal, state, and local governments in the National Capital Region. Federal representatives include the area members of the U.S. Senate and House of Representatives, and state representatives include the area members of the Maryland and Virginia legislatures. All local governments provide representatives, including the District of Columbia government; Arlington, Fairfax, Loudoun and Prince William County governments in Virginia; Alexandria, Fairfax City, Falls Church City governments in Virginia; Montgomery and Prince Georges County governments in Maryland; and Rockville, Takoma Park, College Park, Bowie and Greenbelt City governments in Maryland. The purpose of the Council is to coordinate and develop solutions to regional problems such as air and water pollution, transportation, water supply, housing and

other problems related to a large metropolitan area. The Council absorbed the areawide comprehensive planning functions of the National Capital Regional Planning Commission under Reorganization Plan No. 5 of 1966; and has been designated as the areawide planning agency for the review of all applications for Federal loans or grants to assist in carrying out open-space land projects or for the planning or construction of hospitals, airports, libraries, water supply and distribution facilities, sewerage facilities and waste treatment works, highways, transportation facilities, and water development and land conservation projects. The organization plan of the Council is provided on Plate 3.

STATE DEPARTMENTS AND AGENCIES

Department of Environmental Services. This Department was created on July 27, 1971, by Commissioner's Order No. 71-255 for the purpose "to promote a safe, healthful, and aesthetically attractive environment in the District of Columbia." The stated functions of the Department are to:

Plan, provide, operate, and maintain sanitary services, systems and facilities which will maintain, improve, and promote the well being of the community and its people, including: distribution of water; control and disposal of storm water: collection, treatment, and disposal of sewage; administration of revenue and special fund activities relating to water, sewer, and other services; cleaning of streets and alleys; and collection, processing and disposal of refuse;

Prepare and recommend to the Commissioner environmental criteria and standards, as well as rules, regulations, and plans for their enforcement, for the following: air quality; water quality; radiation; noise; solid waste storage, collection and disposal; dairy establishments, processes and products; methods of operation in food and drug establishments; food sanitation; drug purity; use of potentially dangerous chemicals; food technology and processing; sanitary and other environmental conditions in commercial, industrial, and institutional establishments; sanitary and other environmental conditions in public spaces and on vacant land; and other areas of environmental quality concern which are not assigned to other departments or agencies of the District Government;

Perform such monitoring, inspection, and other related investigative work, including laboratory analysis, as necessary in order to secure compliance with such above standards, rules or regulations as are established;

Perform such educational and consultative work for individual residents, community groups, commercial industrial and institutional establishments, as will be helpful in promoting desirable

environmental quality practices and encourage voluntary compliance with such above standards, rules, and regulations as are established;

Conduct planning, research, and monitoring activities designed to detect, and provide and early warning of, potential environmental quality problems in the District of Columbia;

Conduct research and development activities directed towards achieving solutions to environmental problems in the District of Columbia;

At the request of the Mayor-Commissioner or Deputy Mayor Commissioner, conduct special investigations of, and make recommendations with respect to, various actions having a potential impact on the environment of the District of Columbia; and to

Prepare an annual environmental plan describing the extent to which environmental quality goals and objective of the District of Columbia are being met and providing a forecast of environmental quality conditions, problems, and activities for the coming fiscal year.

The following functions previously assigned to other agencies were transferred to the Department: those of the Department of Sanitary Engineering and of the Director of Environmental Health, Department of Human Resources, and those functions assigned to the Department of Human Resources, pertaining to enhancing the quality of interstate waters, pertaining to a comprehensive program for the control and prevention of air pollution, and pertaining to industrial hygiene, nuisance abatement and vector control. It was also specifically provided that the Director of Environmental Services be a member of the Commissioner's Inter-Agency Committee on Beautification Programs and that three members of the Department of Environmental Services represent the Department on the Board for the Condemnation of Insanitary Buildings.

Washington Aqueduct. Treated water is supplied to the distribution system referred to above under "Department of Sanitary Engineering" by an agency of the Corps of Engineers known as the Washington Aqueduct. On September 30, 1850, the Secretary of War was first made responsible for "supplying the City of Washington with pure water." Since that time, an officer of the Corps of Engineers, and later in 1867, the Corps of Engineers, has been responsible for supplying water to the District of Columbia. This organization has been continued since sometime prior to 1855, when it was first mentioned in a Congressional Statute. The supply system consists of the facilities required to collect the water from the Potomac River at its Great Falls and Little Falls intakes, convey it to the District of Columbia, and filter and pump a portion of it into the distribution system. This includes dams,

conduits, reservoirs, filtration plants, pumping stations and transmission mains.

The Washington Aqueduct also furnishes a substantial amount of treated water to the distribution systems of Arlington and Fairfax County and the City of Falls Church in Virginia and to Federal installations in Maryland and Virginia.

The operating and physical improvements budgets of the Washington Aqueduct are funded from water service revenues. These budgets are coordinated with the D.C. Director of Sanitary Engineering, recommended by the government of the District of Columbia, and approved by the Congress of the United States.

BOARDS AND COMMISSIONS

See "INTERSTATE."

SPECIAL PURPOSE DISTRICTS

The District of Columbia is the "core" city of one of the larger and faster growing metropolitan areas in the country. As the seat of the Federal government, it may be considered as a single special purpose district in which the various aspects associated with water and related land resources have been specifically assigned by Acts of Congress to agencies of the Federal and District of Columbia governments. Through coordination with neighboring political jurisdictions (see "INTERSTATE"), common interests have been advanced in development, planning, policies and programs.

Among the Federal agencies which are unique and which operate in areas distinct from those of the typical Federal-state relationship are the following.

National Capital Planning Commission. The National Capital Planning Commission is the central planning agency for the Federal and District governments with respect to the development and redevelopment of the National Capital. It prepares a Comprehensive Plan for the National Capital and makes recommendations to the appropriate developmental agencies. It also reviews developmental programs of the Federal and District governments applying to the National Capital Region to insure consistency with the Comprehensive Plan. The Commission is composed of five citizen members appointed by the President of the United States, and eight ex-officio members including the Chief of Engineers, U.S. Army; an official of the D.C. Government; Director, National Park Service; U.S. Commissioner of Public Buildings; U.S. Commissioners of Public Roads, Administrator, National Capital Transportation Agency; and the Chairmen of the Senate and House District Committees.

National Capital Region, National Park Service. The National Capital Region is a field office of the National Park Service of the U.S. Department of the Interior. Due to the extensive ownership of land adjacent to the Potomac River and its tributaries in the District of Columbia, Virginia and Maryland, this Federal agency performs many of the activities normally allocated to state agencies for preservation of historical monuments, forestry, reclamation, and recreation.

OTHER POLITICAL SUB-DIVISIONS

The District of Columbia has no political sub-divisions.

III - POLICY

CENTRALIZED VS. DECENTRALIZED RESPONSIBILITY FOR WATER MANAGEMENT

Because of the variety of Federal, District, and compact agencies (See "ADMINISTRATIVE STRUCTURES") engaged in the planning and management of water resources, there is no centralization of responsibility except as delegated by the Commissioner to the Department of Sanitary Engineering as a state agent for the Water Resources Council and the Potomac River Basin Advisory Committee.

Regulatory responsibility for water management rests primarily with the Department of Human Resources, but agencies such as the Department of Sanitary Engineering of the District of Columbia government and the Washington Aqueduct of the Corps of Engineers have operating responsibilities which produce a direct interest and involvement in the success of water and related land resources planning and programs.

"HOME RULE" CONCEPT

Article I, Section 8, Clause 17 of the Constitution of the United States provides in part that the Congress shall have power "to exercise exclusive legislation" over the District created for the seat of government "by cession of particular states . . . . and to exercise like authority over all places purchased by the consent of the state in which the same shall be, for the location of forts, magazines, and arsenals, dock yards, and other needful buildings." Provisions of the Constitution further provide a wide range of authority to the Congress to delegate rulemaking and other authority to designated officials.

In 1949, Congress delegated to the President the responsibility for studying the structure of government and for proposing reorganizations to Congress. Pursuant to this delegation, the President in 1967 proposed the Reorganization Plan No. 3 which provides that all nine Councilmen and either the Commissioner or his Assistant must have been a resident of the District of Columbia for three years proceeding appointment. Thus a measure of the "home rule" concept is provided.

FINANCING

Funds for the construction, operation, and maintenance of water supply, treatment, and distribution facilities; collection, treatment, and disposal of sanitary sewage; and the collection and disposal of stormwater, are obtained from water and sewer service charges, general tax revenues, Federal contributions and loan authorization, and grants by Federal agencies.

COOPERATION, COORDINATION AND COST SHARING

With Federal Programs. The District of Columbia government has cooperated with Federal programs and coordinated its activities for many years with those of other Federal agencies. Historically this cooperation, coordination and cost sharing had existed for more than a century through the efforts of the Department of Sanitary Engineering and the Washington Aqueduct to ensure an adequate and safe water supply for the District of Columbia, adjacent Federal installations, and political jurisdictions in Maryland and Virginia with which contractual relations exist. As is reported under "STATE DEPARTMENTS AND AGENCIES" previously, the District of Columbia also provides sewage treatment service to neighboring jurisdictions under contractural arrangements. Examples of joint programs may also be found in activities such as data collection and research where District and Federal agencies jointly participate in programs utilizing both Federal and District personnel. The increase in recent Federal grant programs has provided increased resources and expanded opportunities for cooperation and coordination in research, data collection, construction of physical improvements and other activities related to water resources.

Interstate. See "ADMINISTRATIVE STRUCTURE, INTERSTATE."

With Political Sub-Divisions. The District of Columbia has no political sub-divisions.

Multi-purpose operations. The District of Columbia government has long supported and actively participated in long-range planning for the full development of the water and related land resources of the Potomac River Basin. Through participation in the various study groups, both Federal and interstate, the District's prime interests have been to (1) insure an adequate supply of water for the Metropolitan area served by the facilities of the Washington Aqueduct, (2) improve water quality, and (3) provide flood protection. The Corps of Engineers' Report on Potomac River Basin, 1963, provides for multi-purpose water resources development.

UTILIZATION OF EXISTING AUTHORITY

The various District and Federal agencies have conducted studies and established programs in keeping with established statutory authority. The construction of specific projects has been delayed at times, because of budget limitations and the need for coordinating activities with those of other agencies.

CHANGES

Recently Adopted. The present organization of the District of

Columbia government (see "ADMINISTRATIVE STRUCTURE") replaced, as of November 1, 1967, a form of government composed of three commissioners, which had been in existence since 1874. The present concentration of executive and administrative responsibilities under a single commissioner rather than three commissioners will emphasize a centralized authority. In March 1971, the citizens of the District elected a non-voting delegate to the House of Representatives, as provided by legislation enacted by the 91st Congress.

Recommended but not Adopted. The Potomac River Basin Advisory Committee proposed a draft of a compact for the Potomac River Basin on October 17, 1967 (see "ADMINISTRATIVE STRUCTURE, INTERSTATE"). The compact in its present form would centralize responsibility in a new commission which would coordinate the development of water and related land resources.

Under Study. None.

IV - PROGRAMS

RESEARCH

Agencies of the District conduct numerous research programs concerning water and related land resources. Many of these research programs are conducted jointly by District and Federal Agencies, utilizing both funds and personnel. Research programs have been associated generally with water quality in the Potomac River relative to the responsibility of providing an adequate and safe water supply to the area, and more effective methods of treating the waste water before it is discharged to the river.

The Department of Sanitary Engineering is participating with the Water Quality Office, Environmental Protection Agency, in several research projects at the Water Pollution Control Plant through a joint utilization of funds and personnel. These projects include advanced waste treatment, raw wastewater flocculation, and investigation of conventional treatment processes. Since the District of Columbia Water Pollution Control Plant is the largest treatment facility in the area, cooperation with interstate groups and local governments is maintained on a continuous basis.

DATA COLLECTION AND INTERPRETATION

Water sampling of the treated water supply of the District is conducted on a continuous basis by the Washington Aqueduct, U.S. Army Corps of Engineers, and the Department of Human Resources, District of Columbia government.

Water quality surveillance sampling of Potomac River is conducted by the Washington Aqueduct, U.S. Army Corps of Engineers, the Departments of Human Resources and Sanitary Engineering of the District of Columbia government, and the Water Quality Office, Environmental Protection Agency, as a part of their studies of the Potomac River Basin.

PLANNING

Planning programs are conducted on a metropolitan, river basin, and regional basis through cooperation with District, Federal, and interstate agencies. A recent result of this cooperation is the draft proposals contained in the Potomac River Basin Compact which resulted from the efforts of the Potomac River Basin Advisory Committee.

Because of the general lack of regulation, control, and management of the water and related land resources of the Potomac River,

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and because of the many Federal, state, and local agencies involved in planning and developing these resources, the District has long realized that effective plans cannot be developed without cooperation at all levels of government. An example of such cooperation between the District and other agencies is the Corps of Engineers' Report on the Potomac River Basin, 1963. This recognition of the need for cooperation has been accepted generally at all levels of government, and has resulted in a growing effectiveness in the planning and development of water and related land resources. (See "ADMINISTRATIVE STRUCTURE, INTERSTATE.")

CONSTRUCTION AND DEVELOPMENT

Flood Control. The various dikes, bulkheads, and levees required for the protection of areas subject to flooding in the District of Columbia have been constructed by or under the advice or supervision of the Corps of Engineers in accordance with a flood control plan administered by the Corps. The Department of Sanitary Engineering coordinates its activities with those of the Corps during flood emergencies.

Water Supply. The diversion dam, intake structures and conduits required to conduct the raw water supply from the Potomac River to the treatment plant have been built and are operated and maintained by the Washington Aqueduct, Corps of Engineers.

Water Quality Control. The maintenance of water quality standards in the District is a responsibility held jointly by the Department of Human Resources, which has been designated as the "State Water Pollution Control Agency," and the Department of Sanitary Engineering, which is the operating agency for water distribution and sewage collection, treatment and disposal. In addition, the Washington Aqueduct, Corps of Engineers, conducts continuous laboratory tests of the raw water supply from the Potomac River to determine compliance with recommended standards of the U.S. Public Health Service, Department of Health, Education, and Welfare. The Washington Aqueduct and the District of Columbia Department of Human Resources jointly monitor the water quality of the entire water distribution system.

Navigation. The District has no responsibility for navigation.

Hydro-Power. There has been little development of hydro-power within the District. Historically several milling or power installations drew water for hydro-power from Rock Creek, a tributary of the Potomac, or from the Chesapeake and Ohio Canal, both of which are under the jurisdiction of the National Capital Region, National Park Service. Of these installations, the old Pierce Mill on Rock Creek remains operational as a historical monument and a private milling company continues to draw water from the Chesapeake and Ohio

Canal. The Washington Aqueduct, Corps of Engineers, operates a small hydro-electric plant which utilizes excess raw water from the Dalecarlia Reservoir for generation of electrical energy, thereby reducing both power demand and total power cost.

General Recreation. The District has no direct responsibility for water based recreation other than efforts to improve water quality to permit maximum use of water resources for recreational use.

Fish and Wildlife. The District has no responsibility for fish and wildlife programs.

REGULATIONS

Water Use. Except for thermal electric plants, a very small amount of the water used in the District of Columbia is obtained from sources other than the water distribution system because of the high degree of urban development within the District. Historically, some businesses, terminal food processing plants, and the U.S. Capitol Heating Plant secured surface water for heating and cooling purposes, but this use has diminished in recent years. There is no water used as potable water supply other than that obtained from the water distribution system in the District.

(1) Surface Water. There is a small diversion of water from the Potomac River for the air conditioning plant at Georgetown University and a large diversion of water from the Tidal Basin by the General Service Administration for air conditioning of the buildings in the buildings in the Federal Government Triangle. In addition, three thermal electric power plants use river water (once through) for cooling condensors.

(2) Groundwater. A few wells for obtaining water for air conditioning and reverse cycle heating exist in the District, but their use is declining. Because of the general lack of usage of surface or groundwater, there are no regulations or statutes regarding its use.

Water Quality.

(1) Domestic Wastes. All domestic wastes services are required by law to be connected to the sewerage system of the District.

All industrial wastes services are required by law to discharge to the sewerage system of the District. However, some treated effluents are discharged to surface streams.

There are no agricultural wastes in the District.

(2) Special Problems. In April, 1969, the Secretary of the

Interior reconvened the Potomac River - Washington Metropolitan Area Enforcement Conference. The conferees represented the water pollution control agencies of Maryland, Virginia, and the District of Columbia; the Interstate Commission on the Potomac River Basin; and the Department of the Interior. (The first two sessions of the conference were held in 1957 and 1958.) The most important recommendation issued by the conferees was the one calling for the construction of advanced waste treatment facilities. The effluent parameters established by the conferees will require almost complete renovation of wastewater and the expenditure of an estimated $359 million to improve the District of Columbia Water Pollution Plant.

Construction by Political Subdivisions and Private Interests. All water and sewer facilities in the District are constructed by the Department of Sanitary Engineering of the District of Columbia government, with the exception of the facilities associated with water supply which are constructed by the Washington Aqueduct of the Corps of Engineers.

Well Drilling. There are no statutes regulating well drilling in the District.

Channel Encroachments. All channel encroachments such as bulkheads, piers, and subaqueous utility crossings are regulated by the Corps of Engineers.

Use of Flood Plains. A great majority of the flood plain area in the District is owned by either District or Federal agencies. In accordance with Executive Order 11296 the Corps of Engineers has prepared flood hazard evaluation guidelines for Federal and District agencies.

DRAINAGE

All plans for drainage facilities in public space are designed (or reviewed) and constructed by or under the supervision of the Department of Sanitary Engineering. The drainage of private property is regulated by the Plumbing Code, which is administered by the Department of Economic Development.

IRRIGATION

There are no irrigation facilities in the District.

CONTROL OF EROSION AND SEDIMENTATION

Regulations for the control of erosion and sedimentation were

promulgated in April 1969 and went into effect in April 1970.

RESERVOIR SITES

There are no proposed or existing impounding reservoirs in the District.

V - PROJECTIONS

POLICY AND PROGRAM TRENDS

The Government of the District of Columbia through its various agencies has and will continue to cooperate and participate with neighboring states and jurisdictions in efforts to assure a safe and adequate water supply for the growing demands of the Metropolitan Washington Area.

An example of policy relating to on-going programs is the recent participation of the District in the preparation of a proposed Potomac River Basin Compact which would create an agency with authority to furnish broad, permanent control over the development and utilization of the water and related land resources to best serve the present and future inhabitants of the basin.

FINANCING FUTURE DEVELOPMENT

The need for adequate water resource management is great and there is a growing realization of this need. It is anticipated that the increasing availability of Federal grants together with revenues and loan authorizations will significantly improve our ability to finance current and future programs.

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VI - INVENTORY OF PROJECTS

NON-FEDERAL PROJECTS: Not applicable.

WATER MANAGEMENT PROBLEMS AND POSSIBLE SOLUTIONS

Water Supply.

(1) Municipal. The lowest recorded flow in the Potomac for a single day at the water supply intakes occurred on September 10, 1966, with a flow of 374 million gallons. On June 26, 1966, the highest recorded maximum daily consumption occurred of 381 million gallons. In the event that minimum flows should occur during periods of maximum demand, it will be necessary to curtail water usage. Since 1965, under an emergency plan sponsored by the Metropolitan Washington Council of Governments, voluntary restrictions are to be requested when the flow exceeds the demand by no more than 100 million gallons per day and mandatory restrictions are to be requested if the difference should drop to 50 million gallons per day or less.

(2) Industrial. The electric generating plants use vast quantities of river water for cooling purposes. This results in a degree of thermal pollution. There is little other use of industrial water in the District.

(3) Agricultural. Not applicable.

Water Quality Control.

(1) Waste Treatment. Water Quality Standards were adopted by the District on June 29, 1967, and forwarded to what was then the Federal Water Pollution Control Administration, now the Water Quality Office of the Environmental Protection Agency, in accordance with the provisions of the Federal Water Pollution Control Act (P.L. 84-660, as amended). Revisions to the standards were adopted on October 17, 1967 and December 16, 1968, after negotiation with the Federal Water Pollution Control Administration. The standards were fully approved by the Secretary of the Interior on January 17, 1969.

(2) Problem Area. Because of the existence of combined system sewers in the older portion of the District of Columbia, overflows of mixed sewage and storm flow to the Potomac and Anacostia Rivers and Rock Creek occur during heavy rains.

(3) Storage for Low Flow Augmentation. The Corps of Engineers' Report on the Potomac River Basin, 1963 recommends reservoir impoundment sites in the basin above the District for flow augmentation, along with other purposes.

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Flood Control. Not applicable to District agencies. The Corps of Engineers has been authorized to determine flood plains, design and construct protection as required for those areas in the District subject to flooding in accordance with Executive Order 11296.

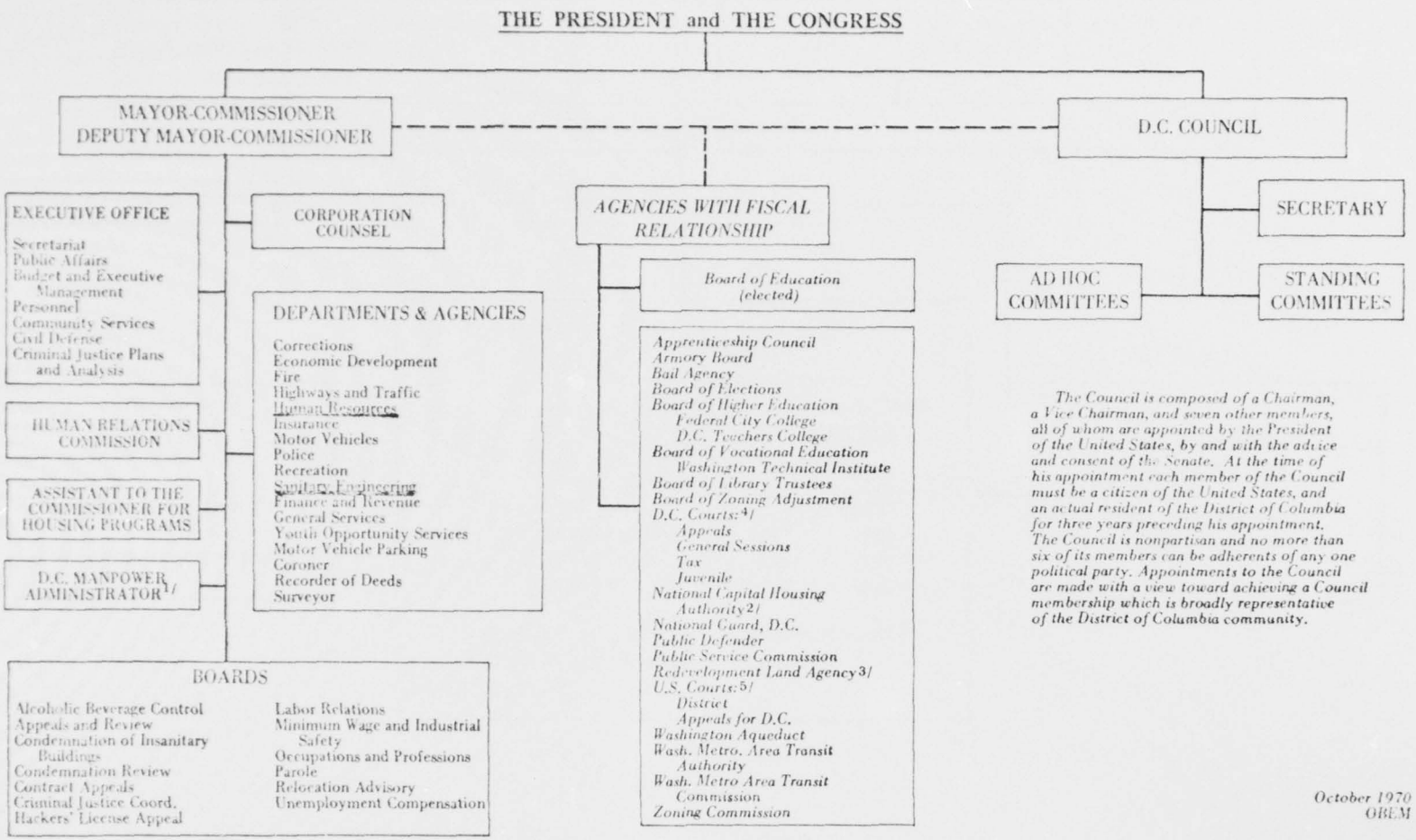
Recreation. Not applicable to District agencies. The Federal Interdepartmental Task Force on the Potomac prepared a report and recommendations which deal with recreation along with other uses.

Navigation. Not applicable to District agencies. The Corps of Engineers conducts its normal activities in the navigable waters of the District.

Hydro-power. Not applicable to District agencies.

FIGURE S-1(DC)

THE GOVERNMENT OF THE DISTRICT OF COLUMBIA



The Council is composed of a Chairman, a Vice Chairman, and seven other members, all of whom are appointed by the President of the United States, by and with the advice and consent of the Senate. At the time of his appointment each member of the Council must be a citizen of the United States, and an actual resident of the District of Columbia for three years preceding his appointment. The Council is nonpartisan and no more than six of its members can be adherents of any one political party. Appointments to the Council are made with a view toward achieving a Council membership which is broadly representative of the District of Columbia community.

October 1970
OBEM

1/ *Part of Manpower Admin., U.S. Dept. of Labor.*
2/ *Exec. Order 11401 of March 13, 1968, designated the Mayor as the "National Capital Housing Authority."*
3/ *Reorganization Plan No. 4 of 1968 gives the Mayor the authority to appoint the RLA Board of Directors.*
4/ *To be replaced February 1971 by D.C. Superior Court and reconstituted Court of Appeals*
5/ *Jurisdiction over D.C. matters to be phased out starting February 1971 and finally by August 1972.*

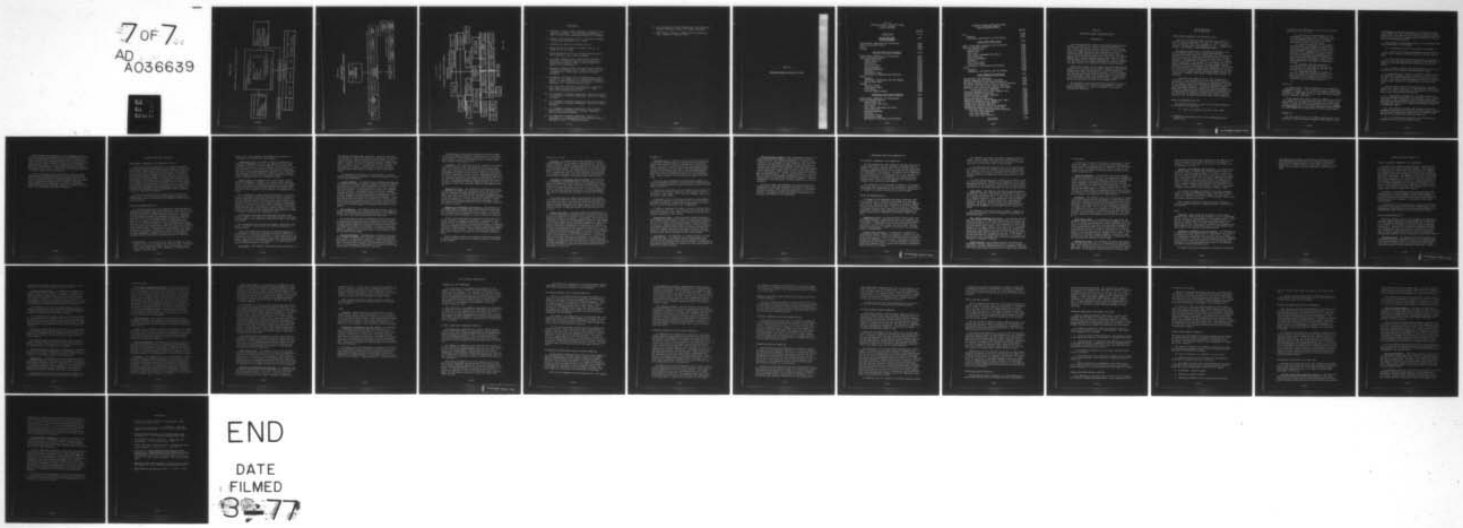
ADVISORY GROUPS: (Boards, Commissions, Committees, Councils, etc.)

Academic Facilities
Aging
Arts
Building Code
Citizens' Traffic
Community Recreation
Correctional
Emergency Medical Services
Food, Nutrition and Health
Health Planning
International Visitors
Mayor's Economic Development
Neighborhood Planning
Public Welfare
Public Welfare — Day Care
Spanish Community
Status of Women
Vocational Rehabilitation
Youth Services
Zoning

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NORTH ATLANTIC REGIONAL WATER RESOURCES STUDY. APPENDIX S. LEGA--ETC(U)
MAY 72 T M HENRY, P H SHAW

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FIGURE S-2(DC)

INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

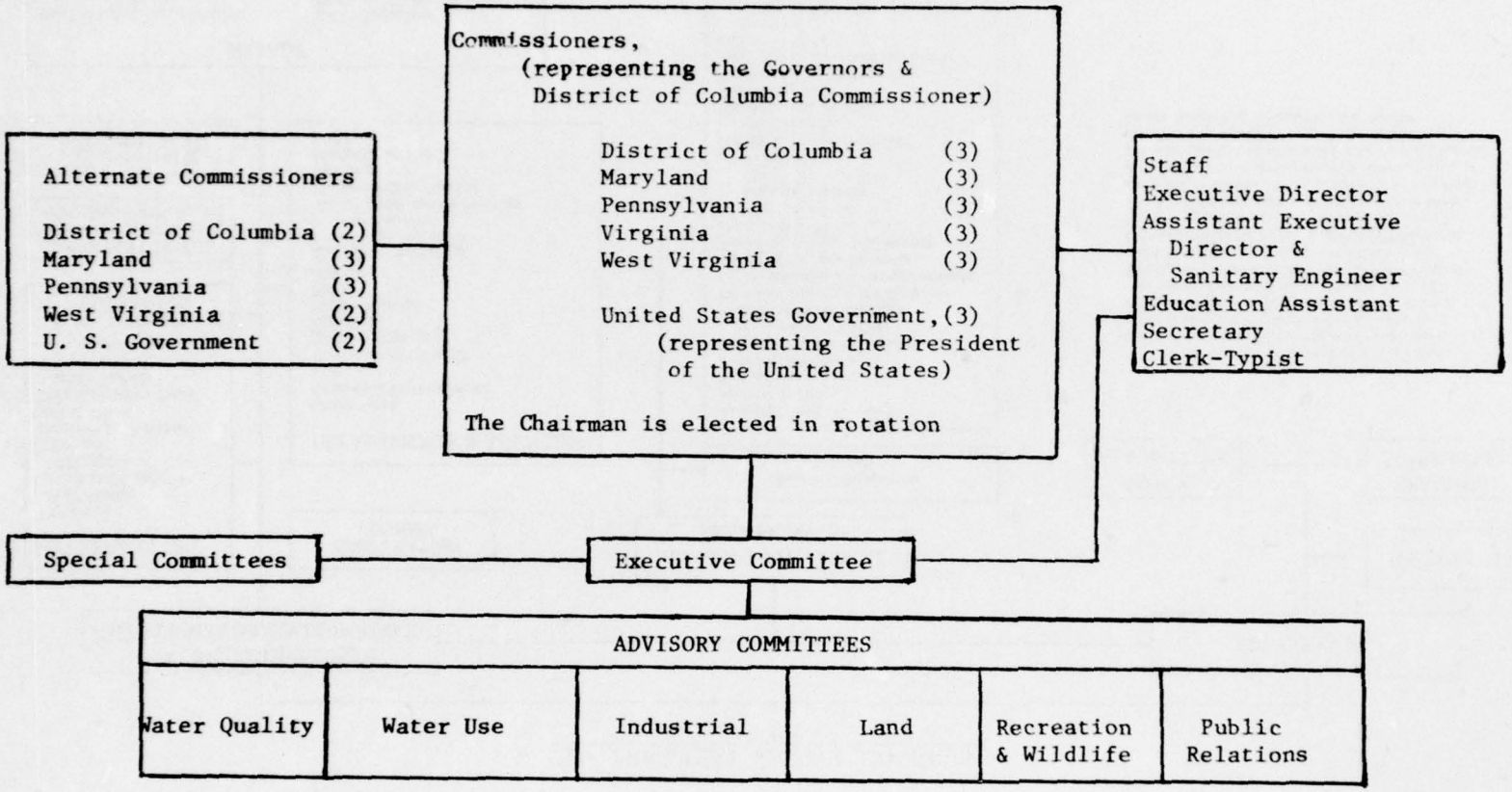


FIGURE S-3(DC)

STAFF ORGANIZATION
METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

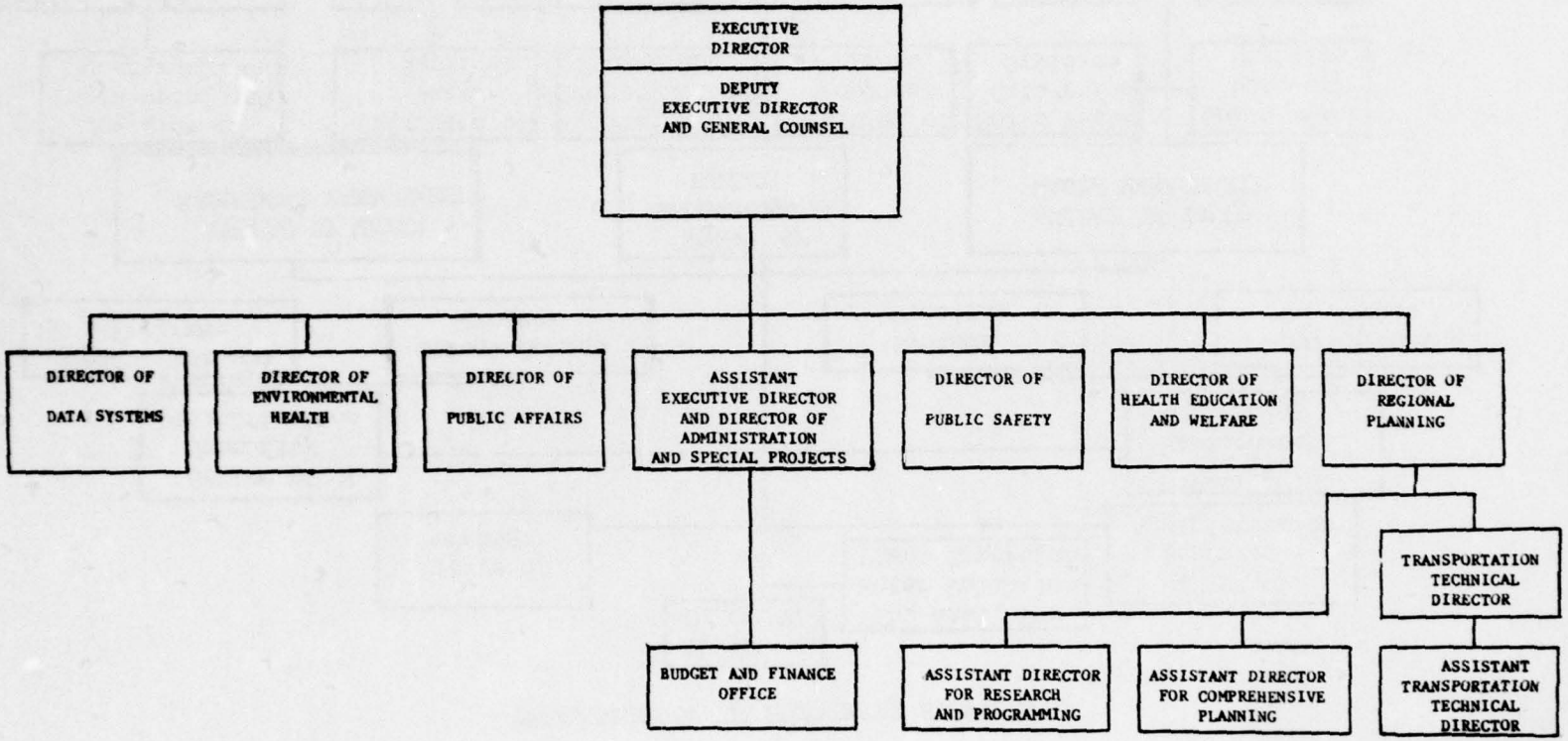
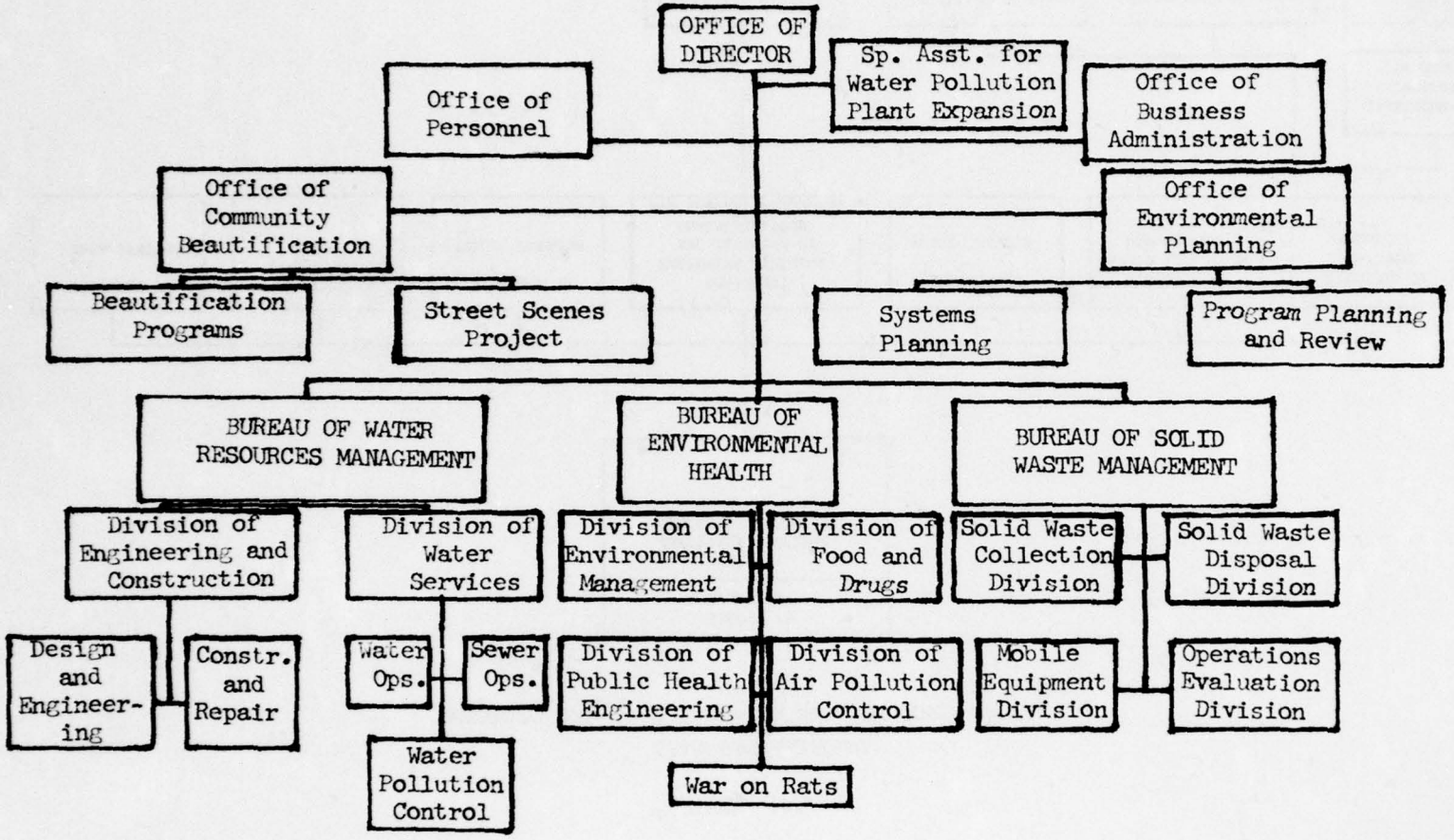


Figure S-4(DC)

DISTRICT OF COLUMBIA

DEPARTMENT OF ENVIRONMENTAL SERVICES



JULY, 1971

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PART III

INTERSTATE-FEDERAL COOPERATIVE BODIES

PART III
INTERSTATE-FEDERAL COOPERATIVE BODIES
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PART III

INTERSTATE-FEDERAL COOPERATIVE BODIES

INTRODUCTION

The interstate-Federal cooperative organizations, existing and proposed, described in this section, while quite different in their powers and purposes, together comprise a distinctly unique facet of the legal and institutional environment of the NAR Study. Unlike the Federal government, their authority is limited to (relatively) small regions; unlike individual states, they can plan or operate across multistate areas; unlike both, they have no legislative or judicial organizations, and have limited or non-existent power to raise revenues independently. They are cooperative affiliations of the Federal government and states, coordinating their efforts in the pursuit of certain common interests.

Reflecting the absence of the complex legal and organizational structures of the states and the Federal government, this section contains little more than descriptions of these commissions' jurisdictions, powers, and areas of activity. Since the relevant laws and judicial rulings are exclusively products of the Federal or individual-state levels, this is appropriate. Intensive analysis of legal authority and institutional powers is specifically excluded, being beyond the scope of the present effort.

The information contained herein may be considered correct as of the beginning of 1972. For future developments or for more detailed information, the reader is referred to the various organizations themselves.

NEW ENGLAND RIVER
BASINS COMMISSION

ESTABLISHMENT, MEMBERSHIP, AND JURISDICTION (4)*

This body was established under the authority of Title II of the Water Resources Planning Act of 1965 (P.L. 89-80; 79 Stat. 244), by Executive Order 11371, September 6, 1967. (For a discussion of the Water Resources Planning Act, see I - FEDERAL LAWS, POLICIES, AND PROGRAMS -- WATER RESOURCES COUNCIL.)

The original jurisdiction of the Commission extended to the six New England States of Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, and Connecticut, and that portion of the State of New York drained by the Housatonic River, but specifically excluding any areas drained by the Hudson River or Lake Champlain. The membership was declared to consist of (1) a Chairman to be appointed by the President; (2) one member each from the Federal Departments of Agriculture; the Army; Commerce; Health, Education, and Welfare; Housing and Urban Development; the Interior; and Transportation; and the Federal Power Commission; (3) one member from each of the seven states within the Commission's jurisdiction; and (4) one member from each interstate compact agency, duly authorized by Congress, which shares jurisdictional area with the Commission.

Executive Order 11528, April 24, 1970, increased the jurisdiction of the Commission to include Long Island Sound and that portion of Long Island drained by it, excluding New York City and its immediate waters; and increased the membership to include the Atomic Energy Commission. The present interstate compact agency membership includes the Atlantic States Marine Fisheries Commission, Connecticut River Valley Flood Control Commission, Interstate Sanitation Commission, Merrimack River Valley Flood Control Commission, New England Interstate Water Pollution Control Commission, and the Thames River Valley Flood Control Commission.

POWERS AND RESPONSIBILITIES (8)

The principal functions of a Title II river basin commission are outlined in the legislation:

(b) Each such commission for an area, river basin,

* Number(s) in parentheses refer to the corresponding bibliography entry.

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or group of river basins shall, to the extent consistent with section 3 of this Act--

> (1) serve as the principal agency for the coordination of Federal, State, interstate, local and nongovernmental plans for the development of water and related land resources in its areas, river basin, or group of rivers basins;
>
> (2) prepare and keep up to date, to the extent practicable, a comprehensive, coordinated, joint plan for Federal, State, interstate, local and nongovernmental development of water and related resources: Provided, That the plan shall include an evaluation of all reasonable alternative means of achieving optimum development of water and related land resources of the basin or basins, and it may be prepared in stages, including recommendations with respect to individual projects;
>
> (3) recommend long-range schedules of priorities for the collection and analysis of basic data and for investigation, planning, and construction of projects; and
>
> (4) foster and undertake such studies of water and related land resources problems in its area, river basin, or group of river basins as are necessary in the preparation of the plan described in clause (2) of this subsection.

POLICY (4)

The primary aspect of such a commission is its cooperative, coordinating function. It has no powers of project construction, management, or regulation, but acts to coordinate and unify these activities by "line" organizations on every level into a comprehensive, consistent joint plan.

The New England River Basins Commission (NERBC) has, by resolution, assented to the Water Resources Council that future multipurpose water and land resources investigations within its area should be carried out with the Commission serving as the leading and coordinating agency, with Federal agencies carrying out specific study elements in accordance with an overall plan of study.

PROGRAMS (4)

The first major project of the NERBC is participation in the completion of the North Atlantic Regional Water Resources Study.

The Commission is also participating in the Northeastern United States Water Supply Study and the Connecticut River Basin Comprehensive Study. All three of these studies are presently under the direction of the Corps of Engineers and are funded, for the most part, by the Federal government.

The Commission has programmed studies to be accomplished under their jurisdiction. These include:

(1) A comprehensive study for southeastern New England.

(2) A study of small dams in New England including aspects of resource value, safety, and measures needed to salvage existing dams.

(3) A study of flood plains including methods of applying zoning or other applicable controls, methods of acquiring land for public use, and other methods which would reduce future flood hazards.

(4) A project to promote coordination between electric power development and other resource and environmental values.

It is expected that in order to successfully complete the studies presently programmed, technical assistance will be required for many of the Federal agencies which are involved in water resources. Input from various State agencies will also be necessary to achieve the objective of a comprehensive coordinated joint plan.

There are three facets to the present strategy of the New England River Basins Commission for completing the comprehensive plan for its area of jurisdiction, in accordance with the requirements of the Water Resources Planning Act:

(1) A New England framework plan, providing information on resources supplies, future needs, and alternative ways of meeting these needs. This is presently in the plan formulation stage, with state and Federal natural resource officials developing draft framework plans for each of 17 basins and groupings of basins in the Commission region;

(2) Joint Federal-state water and related land resources management plans for particular basins and basin groups, including the separately organized and funded plans for Southeastern New England and Long Island Sound mentioned above; and

(3) Joint Federal-state water and related land resources management plans for each New England state.

The preparation and publication of joint management plans by political as well as hydrological areas is a major change in strategy by the Commission, and represents an effort to establish a fully integrated joint planning mechanism at the state (as well as Federal) level, taking advantage of existing state management and administrative systems. It is made possible by the fact that, with minor qualifications, the New England River Basins Commission encompasses entire states, a characteristic unique among Title II river basin commissions now in existence.

It will be necessary for the Commission to overcome several administrative and budgeting problems to assert itself successfully as the principal agency in water resources planning. Such items as Federal provision of coordinated budgets and the elimination of legislation assigning certain studies to individual Federal agencies will be necessary to effectively place the coordination of all water resources studies in the hand of this one agency, the New England River Basins Commission.

DELAWARE RIVER BASIN COMMISSION

ESTABLISHMENT, MEMBERSHIP, AND JURISDICTION (2), (3)

The Delaware River Basin Commission was created as an interstate-Federal compact establishment by laws enacted in 1967 by the United States Congress and the legislatures of the basin States of New York, New Jersey, Pennsylvania, and Delaware.[1] The Commission's members are the Governors of these states (ex officio) and a Federal representative appointed by the President to serve during the latter's term of office. The Compact also authorizes the appointment by each Commissioner of alternates to act in his stead on all matters, and an advisor who may participate in every aspect of the Commission's work except the casting of a vote. This latter device has been important in the functioning of the Commission, by bringing into its deliberations representatives of the Cities of New York and Philadelphia, and the Philadelphia District Engineer of the U.S. Army Corps of Engineers.

The area of jurisdiction of the Commission is limited to the Delaware River basin, but it may conduct activities outside the basin necessary to the fulfillment of its mandated responsibilities within the basin.

POWER AND RESPONSIBILITIES (3)

The extremely broad scope of the Commission's authority made it unique among established river basin bodies until the creation of the Susquehanna River Basin Commission at the end of 1970. It was created four years before the Water Resources Planning Act established the Water Resources Council and authorized river basin commissions under Title II. The relationship between the Commission and the Council is a loose one, and unlike Title II organizations, the powers of the Commission extend not only to planning and advisory functions, but also to construction, operation, maintenance, management, regulation, and supervision of water and related land resources projects in the basin. These functions are exercised in the areas of flood control; municipal, industrial, and agricultural water supply; recreation; navigation; regulation and control of water pollution; watershed management, including fish and wild life propagation, forestry, and soil conservation; protection and aid to fisheries;

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1. United States: P.L. 87-328 (75 Stat. 688), September 27, 1961. New York: Laws of 1961, Chapter 148, March 17, 1961. New Jersey: Laws of 1961, Chapter 13, May 1, 1961. Pennsylvania: Acts of 1961, Act No. 268, July 7, 1961. Delaware: 53 Delaware Laws, Chapter 71, May 26, 1961.

hydroelectric power generation development; and regulation of withdrawals and diversions for these purposes.

Comprehensive Plan. The Compact charges the Commission to formulate a Comprehensive Plan for the immediate and long-range development and use of the water resources of the basin, after consultation with water users and interested public bodies. This Plan considers all of the aspects of water resource development mentioned in the preceding paragraph, and based on it, mthe Commission is further directed annually to construct a Water Resources Program enumerating the public and private projects to be undertaken, including projects of the Commission itself.

General Powers. The Commission may "plan, design, acquire, construct, reconstruct, complete, own, improve, extend, develop, operate, and maintain" any projects and facilities it deems appropriate to its goals, and "establish standards of planning, design and operation of all projects and facilities in the basin which affect its water resources" in every area of the CCommission's interest.

It is authorized to conduct and sponsor research on water resources, including the collection and interpretation of data concerning (among other things) the relation of water to other resources, industrial water technology, ground water movement, relationships between price and water demand, and general hydrological conditions. It may compile and coordinate systematic stream gage and ground water level forecasting data, publishing it when and as needed for water uses, flood warning, quality maintenance, or other purposes, and conduct special ground water investigations as needed to formulate and execute the comprehensive plan.

The Commission may prepare and disseminate information and reports relative to the resources, needs, and policies of the basin, for the benefit of the legislative and executive arms of the signatory parties.

It may negotiate for and accept such legally permissible loans, grants, services, or other aids as are available from public or private sources.

Lastly, the Commission may exercise any powers delegated to it by the Compact or other law, and any powers needed or implied in the execution of its explicit authority. It may charge fees for the services of its various facilities and any project undertaken by any person, corporation, or governmental agency, must first be submitted to the Commission for review and approval, if it substantially affects the water resources of the basin.

Water Supply. The Commission may develop plans and projects for

this purpose, including dams, reservoirs, and related facilities for regulation of surface and ground water resources. It may also acquire, operate, and control projects and facilities for flow regulation, public health, stream quality control, economic development, fisheries, recreation, pollution abatement, salinity control, and other purposes. Assessment for the cost of stream regulation may be made of those measurably benefitting from it, such assessment being limited in amount to that of the actual benefit.

The Commission has the power to furnish storage, treatment, pumping and transmission facilities, but may not engage in the business of distributing water.

Pollution Control. The Commission may undertake investigations and surveys, and acquire, construct, operate, and maintain projects and facilities to control potential pollution and abate or dilute existing pollution of the water resources of the basin, assuming such jurisdiction as, in the Commission's opinion, the comprehensive plan requires. The Commission may, after public hearings, classify the waters of the basin according to quality, with regard to their variously differing hydrological characteristics, and establish standards of liquid waste treatment accordingly. It may also require the construction of pollution control works or other measures where these standards are not being met, and take legal action after investigation and hearings, to compel compliance with rules and regulations adopted by the Commission pursuant to this purpose.

Flood Protection. The Commission may plan, design, construct, operate, and maintain projects and facilities for flood damage reduction, and for storing and releasing the waters of the basin as it sees fit to meet flood conditions as they may arise.

It has the power to study and determine the nature and extent of flood plains in the basin, and, on the basis of such studies, to establish encroachment lines and delineate the areas subject to flooding, classify lands with reference to relative risk of flood and establish standards for flood plain use which will safeguard the public health, safety, and property. The Commission may also acquire an interest in flood plain lands in order to direct their use to minimize flood damage.

Watershed Management. The Commission is directed by the Compact to generally promote sound practices of watershed management in the basin. It may acquire, sponsor, or operate projects and facilities to encourage soil conservation, prevent and control erosion, and promote land reclamation and sound forestry practices; and for the maintenance and improvement of fish and wild life habitats related to the water resources of the basin.

The Commission is specifically directed to plan and conduct a coordinated program of projects in cooperation with the appropriate agencies of the signatory parties, but it may not operate any such project unless it has determined that no other governmental agency can reasonably do so.

Recreation. The Commission, on its own account or in cooperation with a signatory party (or subdivision or agency of such party), may provide for the development of water related public sports and recreational facilities, including their construction, maintenance, and administration, and the renting and supervision of private concessions. It may, further, encourage and coordinate the water related recreation activities of other public agencies, and recommend standards for development and administration. As in the case of watershed management, planning and operations must be carried out cooperatively with the Compact partners, and only in the absence of any other reasonably competent governmental authority.

Hydroelectric Power. The Commission may develop and operate, or authorize to be developed and operated, dams and related facilities for hydroelectric power generation, and may provide transmission facilities for wholesale (but not retail) marketing of the power, where such facilities are not otherwise reasonably available. It has the authority to contract with public utilities or public agencies for hydroelectric power generation development, and to fix "reasonable, nondiscriminatory, and just" rates and charges for the power it produces.

Regulation of Withdrawals and Diversions. The Commission has the general power to regulate and control withdrawals and diversions from surface and ground waters of the basin. It may enter into agreements with the signatory parties regarding the exercise of this power, and may delegate it to any of them as is seen fit.

An area in the basin where the demand for water is such as to create a present or potential shortage may be designated a "protected area" by the Commission after public hearings. In such areas, no water for domestic, municipal, agricultural, or industrial uses may be withdrawn in excess of quantities prescribed by general regulation, except through a special permit granted by the Commission or the states involved. Similar conditions are imposed in areas where a drought has created an actual emergency shortage of water.

These regulatory powers of the Commission supercede withdrawal or diversion permits issued by the signatory states to the extent of any conflict.

POLICY (1), (3), (6)

Financing. The Delaware River Basin Commission is almost entirely dependent for its income on appropriations by the five signatory parties. Capital funds are appropriated on a project-by-project basis, with the relative shares of the partners following a negotiated formula. The Commission may also receive loans, grants, or other aid from any signatory party or any of its agencies or subdivisions, and it may issue bonds for any stated purpose, repayment being made out of the Commission's revenues without recourse to taxation or obligation to any signatory party.

Cooperation, Coordination, and Cost Sharing. The Commission is a cooperative, coordinative body by its very nature, as is explicitly emphasized in many places in the Delaware River Basin Compact, and it is directed to cooperate with appropriate state and Federal agencies in almost every area of its authority. Conversely, state and Federal projects must be planned in consultation with the Commission and accounted for in the Comprehensive Plan, which is the principal instrument of basin-wide coordination.

Cost-sharing policy is based on the principle that project costs should be charged to project beneficiaries in proportion to the benefits received. This basically simple and equitable idea, however, becomes complicated in practice, due to difficulties in defining both the benefits and the beneficiaries, and the final result is subject to negotiation among the interested parties in any case.

Changes Under Study. The rising public and governmental concern over ecology and environmental quality has raised the possibility that the Commission's activities will be expanded in areas not explicitly covered by the Compact. Consequently, the University of Pennsylvania's Institute for Environmental Studies has been engaged to review the Compact and the Commission's programs in light of the National Environmental Policy Act's requirements that natural and social sciences and environmental and design arts be employed in planning and deciding issues with ecological significance. Issues of particular importance to the Commission include the adequacy of its water pollution enforcement powers; the extent of its authority regarding preservation and enhancement of natural, historic, and scenic values relating to water; the advisability of redefining water law principles and land use regulations; the extent of its authority to protect and manage flood plains, tidal marshes, and wetlands; the implications of concentrations of people, industry, and land development on water uses and related environmental quality; and potential methods of financing environment-related programs. The report is due in 1971.

PROGRAMS (1)

Pollution Control. Pollution control in the river's estuary has progressed from calculation of the maximum total quantity of organic waste consonant with an acceptable level of dissolved oxygen in the water, to allocation of this total quantity among the dischargers of such wastes, each having the responsibility of reducing its discharge to its share of the permissable maximum. Abatement orders and timetables are in effect for dischargers whose waste output allocations are 80% of the total permissable load. Cleanup programs for the remaining dischargers are under study.

Plans are being formulated for nontidal waters whereby the states would identify pollution violators and the Commission would require abatement timetables of these violators, as in the case of estuarine polluters.

Monitoring of estuarine water is conducted in cooperation with the States of New Jersey, Pennsylvania, and Delaware. Factors considered include oxygen, color, toxic and suspended matter, and nitrogenous oxygen demand.

A basinwide survey of the sources and extent of discharges of pesticides and mercury has been started, and an inventory is being taken of industrial liquid waste storage lagoons, in order to protect surface and ground waters for contamination.

Studies are being made of a number of possible regional liquid waste treatment facilities, and a miniature pilot plant was constructed at Deepwater, New Jersey, to investigate the technical and economic feasibility of the concept.

Hydroelectric Power. Several proposals for new hydroelectric power generation facilities are before the Commission, bringing to the fore the conflict between the swiftly growing demand for electricity in the basin, and the limited amount of water available for all uses. Esthetic and ecological issues are also in question. The proposed nuclear facilities would be located at Newbold and Artificial Islands, New Jersey, and Limerick Township, Pennsylvania; the proposed pumped-storage project would be on Kittatinny Mountain in New Jersey, opposite the Tocks Island damsite.

Flood Control. The Commission, in cooperation with the Corps of Engineers, the U.S. Geological Survey, state agencies, and volunteer watershed associations, has been mapping the basin's flood plains and compiling flood history atlases, to aid municipalities achieve proper flood plain zoning and to make them eligible for Federal flood plain insurance.

Multiple-Purpose Projects. Work is proceeding on half of the eight multiple-purpose reservoirs authorized for the basin by Congress in 1962. The Beltzville Reservoir is virtually completed and will be operational for water supply in June, 1971. Authorization has been given by Congress to begin construction of the huge Tocks Island Reservoir-Delaware Water Gap National Recreation Area complex, long delayed by lack of funds and conservationist opposition. However, work on this project cannot begin until final acceptance of a report, not yet completed, concerning its environmental impact. The Blue Marsh Reservoir, to be located six miles north of Reading, Pennsylvania, is in the stage of design and site acquisition by the Corps of Engineers. The Trexler Reservoir, near Allentown, is being designed by the Corps of Engineers.

In all four cases, the Commission has formally assumed responsibility to reimburse the Federal government for the cost of including the water supply feature in the project, in accordance with the provisions of the River and Harbor Act of 1958 (P.L. 85-500). The reimbursal funds will come from income from wholesale water distribution by the Commission.

SUSQUEHANNA RIVER BASIN COMMISSION (7)

ESTABLISHMENT, MEMBERSHIP, AND JURISDICTION

The Susquehanna River Basin Commission came into being in the opening days of 1971, with the signing by the President of the compact, as passed by Congress (P.L. 91-575, 84 Stat. 1509), and concurrent legislation by the States of New York and Maryland and the Commonwealth of Pennsylvania. The members of the Commission are the governors of the signatory states or their designees, and one member appointed by the President of the United States, to serve at his pleasure. Alternates are also appointed by each signatory party. Actions of the Commission are initiated by concurrence of three of the four members.

The jurisdiction of the Commission is limited to the Susquehanna River basin, except when action elsewhere is required for it to discharge its responsibilities within the basin, and subject to the consent of the state in which action would be taken.

POWERS AND RESPONSIBILITIES

The powers of the Susquehanna River Basin Commission range from a primary role in planning and coordination of planning activities by others, to direct construction, operation, maintenance, control, regulation, and supervision of water and related resources projects in the basin. These functions are exercised in the areas of water supply, water quality maintenance, watershed management, recreation, and hydroelectric power generation, as well as regulation of withdrawals and diversions toward these ends.

Comprehensive Plan. The Commission must develop, adopt, and periodically review, a comprehensive plan for the immediate and long range development and use of the water and related resources of the basin, considering all public and private projects and facilities required to meet present and future needs. Specific attention must be given to effects of the plan on the receiving waters of Chesapeake Bay.

General Powers and Duties. The Commission is empowered to "plan, design, acquire, construct, reconstruct, complete, own, improve, extend, develop, operate, and maintain any and all projects, facilities, properties, activities, and services which are determined by the Commission to be necessary, convenient, or useful for the purposes of this compact." It can set standards of planning, design, and operation of all projects and facilities affecting the water resources of the basin.

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The Commission may conduct and sponsor research on water resources, conduct surface and ground water investigations, and collect and publish data, information, and reports on the water resources of the basin and their related problems.

It can negotiate loans, grants, gifts, or services from public or private sources to finance its activities, assign rates and charges on the use of its facilities and services, and initiate court actions to enforce provisions of the compact, or regulations adopted by the Commission, which have been found to be violated.

No project affecting the water resources of the basin, except for those specifically exempted, may be undertaken by any person, governmental authority, or other entity without the prior review and approval of the Commission, to insure that such projects are consistent with the wisest development and use of those resources.

Water Supply. The Commission may develop plans and projects for domestic, municipal, agricultural, and industrial water, including dams, reservoirs, and other facilities for the capture and use of ground and surface water. It may store and release water for streamflow regulation, for the protection of public health, stream quality control, economic development, improvement of fisheries, recreation, salinity control, and other purposes. Assessment may be made on the particular beneficiaries of such regulation and management, up to the amount of the benefit received.

The Commission can provide storage, treatment, pumping, and transmission facilities, but may not engage in the business of distributing water.

Water Quality Management and Control. The Commission may perform (or contract for) studies and investigations on present and future water quality in the basin, and the effects of actual and projected operations on it, and, when necessary, may build, operate, and maintain water quality control facilities. The intended emphasis of the compact, however, is on action by the signatory states, with the Commission in a coordinative and advisory role, recommending water quality standards, and encouraging cooperation and uniform enforcement programs and policies. It may assume jurisdiction where the comprehensive plan makes it necessary, and may initiate court proceedings when it finds its regulations and standards not adequately realized.

Flood Protection. Any necessary projects for flood plain development and flood damage reduction may be planned, designed, constructed, operated, and maintained by the Commission, which may store and release waters within the basin to meet flood conditions

as they arise.

Studies may be conducted to delineate flood plains, classify lands with regard to risk of flooding, and after hearings, promulgate standards and regulations for appropriate land use within flood plains. The Commission has the power to acquire the fee simple or lesser interest in lands and properties within flood plains toward this end.

Watershed Management. The Commission can acquire, sponsor, or operate projects and facilities to encourage soil conservation, prevent and facilities to encourage soil conservation, prevent and control erosion, promote land reclamation and sound land and forest management, and maintain and improve fish and wildlife habitat related to the water resources of the basin. It may take such action, however, only if it has determined that no other suitable government agency is willing or able to do so. It is directed to cooperate with the appropriate agencies of the signatory parties in the planning and realization of a coordinated program of projects and facilities for these purposes.

Recreation. The Commission may, on its own account or cooperatively with signatory parties (or agencies or subdivisions of any such party), provide for the development of water-related public sports and recreational facilities, including their construction, maintenance, and administration, and the renting and supervision of private concessions. As in the case of watershed management, the Commission is directed to cooperate with the signatory parties and others in planning and effectuating a coordinated program of projects, and may operate a project or facility only if it finds no other appropriate governmental authority able and willing to do so.

Other Public Values. It is stated in the compact that the signatory parties will pursue water resource management in such a way as "to preserve and promote the economic and other values inherent in the historic and scenic and other natural amenities of the Susquehanna River basin for the enjoyment and enrichment of future generations, for the promotion and protection of tourist attractions in the basin, and for the maintenance of the economic health of allied enterprises and occupations of the basin." The Commission may recommend minimum standards of regulation of land and water use, and other protective measures, to governments with jurisdiction within historic or scenic areas.

Hydroelectric Power. The Commission may develop and operate dams and ancillary facilities for the generation of hydroelectric power, and transmission facilities for the wholesale marketing of power where such facilities are not otherwise available on reasonable terms. It may also let contracts to public utilities and

agencies for hydroelectric power development. Retailing of power by the Commission is proscribed, however, and the rates and charges it fixes on the power it sells must be "reasonable, nondiscriminatory, and just."

Regulation of Withdrawals and Diversions. The Commission has the general power to regulate and control withdrawals and diversions from surface and ground waters of the basin. An area in the basin where the demand for water is such as to create a present or potential shortage may, after public hearings, be designated a "protective area". In such a case, no water may be withdrawn for domestic, municipal, agricultural, or industrial purposes in excess of quantities prescribed by general regulation, except through a special permit granted by the Commission or the states involved. Similar conditions are imposed in areas where a drought has created an actual emergency shortage of water.

If a natural or manmade catastrophe (other than a drought) causes an "actual and immediate shortage of available and usable water", the Commission by unanimous consent may impose direct controls on the use of water, and coordinate Federal, state, local, and private activities as needed.

These emergency regulatory powers supercede withdrawal or diversion permits issued by the signatory states to the extent of any conflict.

POLICY

Financing. Capital funds may be raised by sale of bonds, issued for any stated purpose and repayable out of the Commission's general revenues, without obligation to any signatory party. Funds may also be directly appropriated by the signatory parties on a project-by-project basis, costs being shared according to an agreed-upon formula. Loans, grants, appropriations, advances, and other transfers from the signatory parties to the Commission are authorized to cover capital or operating expenses.

Cooperation, Coordination, and Cost Sharing. The Commission is a cooperative, coordinative body by its very nature, as is explicitly emphasized in the compact, and it is directed to cooperate with appropriate Federal and state agencies in virtually every area of its authority. Conversely, projects undertaken by the signatory parties must be planned in consultation with the Commission and accounted for in the comprehensive plan, which is the principal instrument of basin-wide coordination.

The compact directs the development of equitable cost-sharing

and reimbursement formulas, including the allocation of project costs among purposes, distribution of financial responsibility among and with signatory parties, public bodies, and private enterprises, and apportionment of reimbursable revenues, or payments in lieu of taxes, to signatory parties or their subdivisions.

POTOMAC RIVER BASIN COMPACT (5)

STATUS OF ENACTMENT, MEMBERSHIP, AND JURISDICTION

The Potomac River Basin Advisory Committee, composed of representatives of the States of Maryland, Virginia, West Virginia, the Commonwealth of Pennsylvania, and the District of Columbia, has prepared a draft of an interstate-Federal compact establishing a Potomac River Basin Commission, to further the conservation, utilization, development, and management of the water and related resources of that basin. The compact was enacted by Virginia in 1970, and by Maryland in 1971, but has not yet been acted upon by West Virginia, Pennsylvania, or the U. S. Congress (on behalf of both the Federal government and the District of Columbia). However, it may be expected that the compact will achieve final approval in substantially its present form (October 1971). The discussion that follows is based on the version.

The members of the Commission would be the governors of the signatory states or their designees, and one member appointed by the President of the United States to serve at his pleasure. A governor intending to attend a meeting in person would inform the other governors of his intention. Alternates for each member would be named.

The jurisdiction of the Commission is limited to the Potomac River basin, except when action elsewhere is required for it to discharge its responsibilities with the basin, and subject to the consent member from the state in which action would be taken.

POWERS AND RESPONSIBILITIES

Particular emphasis is given by the compact to utilization of functions, powers, and duties of existing agencies of government, with the Commission acting on its own account only if, and only for as long as, no such agency is willing or able to take appropriate action. Moreover, the planning and regulatory powers of the Commission are limited, in that they are permitted to affect state, regional or local planning and zoning only to the extent that the latter "substantially conflict with the Commission's planning and regulation of water resources and other public values."

Comprehensive Plan. The Commission must develop, adopt, and periodically review, a comprehensive plan for the immediate and long range development and use of the water and related resources of the basin, considering all public and private projects and facilities required to meet present and future needs. Specific

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attention must be given to relevant portions of Federal, state, regional and local plans prepared by any other body.

General Powers and Duties. The Commission is empowered to "plan, design, acquire, construct, reconstruct, complete, own, improve, extend, develop, operate, maintain, and regulate any and all projects, facilities, properties, activities, and services which are determined by the Commission to be necessary, convenient, or useful for the purposes of this compact." It can set standards for planning, design, and operation of all projects and facilities affecting the water resources of the basin.

The Commission may conduct and sponsor research on water resources, conduct surface and ground water investigations, and collect and publish data, information, and reports on the water resources of the basin and their related problems.

It can negotiate loans, grants, gifts, or services from public or private sources to finance its activities, assign rates and charges on the use of its facilities and services, and initiate court actions to enforce provisions of the compact, or regulations adopted by the Commission, which have been found to be violated.

No project affecting the water resources of the basin, except for those specifically exempted, may be undertaken without the prior review and approval of the Commission to insure that such projects are consistent with the wisest development and use of these resources.

The compact confers on the Commission the power to acquire real and personal property by eminent domain, and to hold, administer, maintain, and dispose of such property as it sees fit for carrying out its functions under the compact.

Notwithstanding its jurisdictional limitations, the Commission may enter into interbasin agreements not inconsistent with the purposes of the compact. It must consider the effects of any of its action on the receiving waters of Chesapeake Bay.

Water Supply. The Commission may develop plans and projects for domestic, municipal, agricultural, and industrial water, including dams, reservoirs, and other facilities for the capture and use of ground and surface water. It may store and release water for streamflow regulation, for the protection of public health, stream quality control, economic development, improvement of fisheries, recreation, salinity control, and other purposes.

The Commission can provide storage, treatment, pumping, and transmission facilities, but may not engage in the business of

distributing water.

Water Quality Management and Control. The Commission may perform (or contract for) studies and investigations on present and future water quality in the basin, and the effects of actual and projected operations on it, and, when necessary, may build, operate, and maintain water quality control facilities. The intended emphasis of the compact, however, is on action by the signatory states, with the Commission in a coordinative and advisory role, recommending water quality standards, and encouraging cooperation and uniform enforcement programs and policies. It may assume jurisdiction where the comprehensive plan makes it necessary, and may initiate court proceeding when it finds its regulations and standards not adequately realized. Furthermore, it may assess any person or governmental agency for pollution-related damages to the Commission caused by them, or act on behalf of any other governmental agency suffering damages, and may institute civil action to enforce such an assessment.

Flood Protection. Any necessary projects for flood plain development and flood damage reduction may be planned, designed, constructed, operated, and maintained by the Commission, which may store and releasewaters within the basin to meet flood conditions as they arise.

Studies may be conducted to delineate flood plains and classify lands with respect to risk of flooding. The Commission must review and comment upon all plans, procedures and programs of every person or governmental agency, relating to present and future projects, facilities, and structures within flood plains, and which may affect or be affected by flooding.

Watershed Management. The Commission can acquire, sponsor, or operate projects and facilities to encourage soil conservation, prevent and control erosion, promote land reclamation and sound land and forest management, and maintain and improve fish and wildlife habitat related to the water resources of the basin. Projects relating to fish and wildlife are subject to the approval of the appropriate agency of the signatory state in which they are located.

Recreation. The Commission may, on its own account or cooperatively with signatory parties (or agencies or subdivision of any such party), provide for the development of water-related public sports and recreational facilities, including their construction, maintenance, and administration, and the renting and supervision of private concessions. The Commission is directed to cooperate with the signatory parties and others in planning and effectuating a coordinated program of projects, and may construct or operate a project or facility only subject to the approval of the commissioner from the signatory state in which it is located.

Other Public Values. It is stated in the compact that the signatory parties will pursue water resource management in such a way as "to preserve and promote the aesthetic and other values inherent in the historic, scenic, and environment amenities of the Potomac River basin for the enjoyment and enrichment of future generations and related such values to the economic health of the basin and the promotion of the orderly development of the basin." The Commission may act as an agency for the intergovernmental coordination and effectuation of local, regional, state, and interstate planning.

The Commission is directed to develop and adopt, and periodically review and revise, an amenities plan and programs for the development and preservation of the aesthetic, scenic, and historic values along the Potomac and its tributaries. This includes consideration of agricultural, industrial, commercial, and residential values, and of relevant plans by other bodies, on the Federal, state, regional, and local levels. It would consider public and private areas, waters, lands, lands uses, and necessary projects and facilities, and would provide for delineation of river zones, within which land use controls would be instituted, and parks, parkways scenic areas, open spaces, recreation areas, historic areas, trail corridors, wetlands or natural areas acquired. In effectuating this plan, the Commission might acquire the fee or lesser interest or other right in real or personal property, by any means, except if adequate laws or regulations of governmental authority exist.

The Commission would be empowered to assist local agencies in developing coordinated, comprehensive land uses plans for river zones, and to propose state and local land use controls for their execution. It could designate park recreation, scenic, and historic areas, and recommend programs for their preservation and enhancement, minimum standards of regulation of land and water use, and model laws and regulations.

Hydroelectric Power. The Commission may not, as a primary activity, engage in the construction or operation of hydroelectric generating or transmission facilities, but this purpose may be provided for in any project of the Commission, either directly or under contract, as the Commission finds appropriate. Means for transmission of such generated power may be provided for wholesale marketing, where not otherwise available on reasonable terms, but the Commission may not engage in the business of retailing power.

Regulation of Withdrawals and Diversions. The Commission has the power to regulate and control withdrawals and diversions from surface and ground waters of the basin. An area in the basin where the demand for water is such as to create a present or potential shortage may, after public hearings, be designated a

"protected area". In such a case, no water may be withdrawn for domestic, municipal, agricultural, or industrial purposes in excess of quantities prescribed by general regulation, except through a special permit granted by the Commission or the states involved. Similar conditions are imposed in areas where a drought has created an actual emergency shortage of water.

These emergency regulatory powers supercede withdrawal or diversion permits issued by the signatory states to the extent of any conflict.

POLICY

Financing. Capital funds may be raised by sale of bonds, issued for any stated purpose and repayable out of the Commission's general revenues, without obligation to any signatory parties on a project-by-project basis, costs being shared according to an agreed-upon formula. Loans, grants, appropriations, advances, and other transfers from the signatory parties to the Commission are authorized to cover capital or operating expenses.

Cooperation, Coordination, and Cost Sharing. The Commission is a cooperative, coordinative body by its very nature, as is explicitly emphasized in the compact, and it is directed to cooperate with appropriate Federal, state, and local agencies in virtually every area of its authority. Conversely, projects undertaken by the signatory parties must be planned in consultation with the Commission and accounted for in the comprehensive plan, which is the principal instrument of basin-wide coordination. Particular coordination is required with the Potomac River Fisheries Commission.

The compact directs the development of equitable cost-sharing and reimbursement formulas, including the allocation of project costs among purposes, distribution of financial responsibility among and with signatory parties, public bodies, and private enterprises, and apportionment of reimbursable revenues, or payments in lieu of taxes, to signatory parties or their subdivisions.

INTERNATIONAL JOINT COMMISSION

The International Joint Commission was organized in 1911 pursant to the Treaty of January 11, 1909, between the United States and Great Britain. It is composed of six members, three appointed by the President of the United States and three appointed by the government of Canada. The broad purpose of the Commission is to prevent disputes regarding the use of boundary waters, settle questions between the two countries concerning rights, obligations, or interests of either along the common frontier, and provide for the adjustment and settlement of all such questions which may arise.

More specifically, the Commission must approve (or disapprove) all proposals for use, obstruction or diversion of boundary waters on either side of the boundary which would affect the natural level or flow of the boundary waters on the other side. It also investigates and makes recommendations on specific problems along the frontier which are regerred to it by the national governments, such as air and water pollution, and preservation of the American Falls at Niagara.

ATLANTIC STATES MARINE FISHERIES COMMISSION

This Commission, established by interstate compact pursuant to Public Law 77-539 (1942), is a fact-finding and deliberative body, with the power to make recommendations to the member states and the Congress concerning the better utilization of marine, shell and anadromous fisheries. There are three members from each state; one from the state agency concerned with fishery resources, one from the legislature, and one appointed by the governor.

The Commision is composed of the coastal states from Maine to Florida, divided into four geographic sections. The North Atlantic Section (Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut), Middle Atlantic Section (New York, New Jersey, Pennsylvania, and Delaware), and Chesapeake Bay Section (Maryland and Virginia) are in the NAR. Vermont and Pennsylvania, whose concern is the better utilization of their anadromous fisheries, are also signatories.

The powers of recommendation of the Commission include such areas as the coordination of the exercise of the various states' police powers, desirable legislation, regulations regarding fisheries, and stocking proposals and projects to be undertaken by the states. It also has the power, conferred by Public Law 81-721 but not yet exercised, to act for the states as a joint regulatory agency over operations in fisheries in which the states have a common interest.

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The Commission is supported by financial assessments against each member state, based generally on the primary market value of their fishery products, exclusive of cod and haddock.

NEW ENGLAND REGIONAL ACTION PLANNING COMMISSION

Title V of the Public Works and Economic Development Act of 1965 (79 Stat. 552; 42 U.S.C. 3121) authorizes the Secretary of Commerce to designate economic development regions, and to invite the states of a region to establish a regional commission. The New England Region, consisting of the entire States of Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, and Connecticut, was designated on 2 March, 1966, and the Commission was organized on 20 March, 1967. Members are the Federal Co-chairman and the New England Governors, one of whom is elected Commission State Co-chairman.

The purpose of the Commission is to develop long-range, comprehensive economic development programs for the region, to coordinate Federal and state economic development activities in the region, and to promote increased private investment through technical assistance and demonstration projects.

Project grants are made available through the Commission to states, counties, cities, towns and nonprofit organizations, to provide a portion of the local share of Federal grant-in-aid programs for the construction or equipping of facilities or the acquisition of land, when the recipient, because of its economic situation, cannot supply its full matching share. However, the state or community must finance at least 20 percent of total project costs. Eligible grant programs include those under the Federal Water Pollution Control Act, the Watershed Protection and Flood Prevention Act, and the Land and Water Conservation Fund Act of 1965.

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

The New England Interstate Water Pollution Control Commission was established by an interstate compact adopted by the Commonwealth of Massachusetts and the States of Connecticut, Rhode Island, New York, Vermont, New Hampshire and Maine between 1947 and 1955. The area of jurisdiction of the Commission includes all interstate waters of signatory states and tidal waters ebbing and flowing past the boundaries of any two signatory states. The waters under the jurisdiction of the Interstate Sanitation Commission (New York, New Jersey, and Connecticut) are excluded.

There are five members from each signatory state. The purpose

of the Commission includes the establishment of water quality standards for various classifications of use in the water bodies under its jurisdiction, and the formulation of programs to meet established standards. In accomplishing its purpose, the Commission performs as an action agency to abate and control pollution and works very closely with the pollution control agencies of each of its member states to this end. Any comprehensive planning function would be undertaken by the New England River Basins Commission with the NEIWPCC advising on matters concerning the quality of water.

The Commission engages in various activities and programs, including inventories of the status of pollution control systems and progress in pollution control by municipalities and industries; surveys of and research concerning waste treatment technology; development of criteria for various uses of water bodies, as a continous program; training of existing sewage treatment plant operators; research involving the legal aspects of varieties of water usage; public information and education; coordination of interstate matter pollution control activities; and studies of specific problems of area-wide significance, such as pollution from small boats.

CONNECTICUT RIVER VALLEY FLOOD CONTROL COMMISSION

The Commission was established as a result of an interstate compact approved by the Congress and the States of Connecticut, Massachusetts, New Hampshire, and Vermont on September 8, 1953. The compact was formulated to facilitate the construction of reservoirs and dams on tributary streams of the Connecticut River for flood control, under the assumption that a comprehensive flood control system should include dams and reservoirs to control flood run-off from approximately twenty-five percent of the total drainage above Hartford, Connecticut. The compact provides an interstate agreement for the construction of flood control dams and reservoirs at Barre Falls (Ware River) in Massachusetts, West Townshend (West River), Ball Mountain (West River), North Hartland (Ottauquechee River), Groton Pond (Wells River), Victory (Mosse River), Bloomfield (Nulhegan River) in Vermont, and at South Keene (Otter Brook), Walpole (Cold River), Bethlehem Junction (Ammonoosuc River) in New Hampshire.

The Commission reviews and compensates those economic losses of a non-speculative nature suffered by property owners resulting from the construction of a flood control project. The compact also provides that Connecticut and Massachusetts will refund ninety percent of taxes lost by the upstream states as a result of the flood control program, and establishes the Commission as the working agency to carry out the provisions of the compact.

The Commission, composed of three members of each of the signatory states, has operated as an advisory and coordinating agency to facilitate the construction of proposed flood control projects in the river basin.

MERRIMACK RIVER FLOOD CONTROL COMMISSION AND THAMES RIVER FLOOD CONTROL COMMISSION

These two commissions, formed by compacts between the States of Massachusetts and New Hampshire, for the Merrimack basin (1956) and the States of Connecticut, Rhode Island, and Massachusetts, for the Thames basin (1957), are closely similar in their policies and functions to the Connecticut River Valley Flood Control Commission, described immediately above.

INTERSTATE COMMISSION ON THE LAKE CHAMPLAIN BASIN

A quasi-official interstate body, the Interstate Commission on the Champlain Basin has operated in the past to bring together resource management personnel from the States of New York and Vermont to plan orderly development of the land and water resources of the Champlain Basin. Although no official compact was created to authorize this agency, both States have had tentative statutory approval to create the Lake Champlain Basin Compact. Once established, this Compact will serve as a formal planning authority charged with the responsibility of planning land and water resources within the Champlain Basin, including such activities as water pollution control.

INTERSTATE SANITATION COMMISSION

The Interstate Sanitation Commission was created in 1936 for the purpose of enforcing the provisions of the Tri-State Compact for Water Pollution Abatement. The States of Connecticut, New Jersey and New York each agreed to appropriate funds for the operating expenses of the Commission and pledged cooperation to the abatement of pollution in the tidal and coastal waters of the district. Due to recent state pollution control programs, the requirements of the Commission are now surpassed by the states water quality standards for the same areas.

This agency is responsible for anti-pollution measures affecting coastal, estuarial and tidal waters in a district that extends from Sandy Hook in New Jersey, includes all of New York Harbor, north on the Hudson River to the northern boundaries of Westchester and Rockland Counties, then eastward to New Haven on the Connecticut shore and Port Jefferson on the Long Island shore of

Long Island Sound. Along the south shore of Long Island, it extends eastward to the Fire Island inlet. It has investigative power and may resort to the courts to compel enforcement of Commission orders. The Commission seeks to develop better coordination and more active cooperation among the interested entitles toward the constructio of necessary waste treatment works to improve and protect water quality the district.

In addition, it has been given responsibilities relating to air pollution problems affecting New York and New Jersey.

TRI-STATE REGIONAL PLANNING COMMISSION

Established on April 1, 1966 following legislative action in 1965 by the States of New York, New Jersey, and Connecticut, the Commission is the official interstate planning agency concerned with immediate and long-range transportation, land use, and comprehensive planning problems of the New York metropolitan region, covering 22 counties in New York and New Jersey and six planning regions in southwestern Connecticut. The Commission, formerly the Tri-State Transportation Commission, succeeds the Tri-State Transportation Committee formed in 1961.

There are five members from each state; ont of the New York members must be the Chairman of the New York City Planning Commission. In addition, there are three nonvoting Federal members, one from the Department of Housing and Urban Development, and two from the Department of Transportation (one each from the Federal Highway Administration and the Federal Aviation Administration). Financing of Commission activities is accomplished by appropriations by the member states and the Federal agencies.

The Commission is the official agency designated as the Metropolitan Clearinghouse by the Federal Office of Management and Budget to review all applications for Federal aid as required under Section 204 of the Demonstration Cities and Metropolitan Development Act of 1966, the Intergovernmental Cooperation Act of 1968 and the National Environmental Policy Act of 1969, for the following functional categories: airports; mass transit; hospitals; libraries; open space and recreation; water supply and distribution; sewerage facilities and waste treatment; highways; water development and land conservation; law enforcement facilities; and comprehensive planning for housing, including community renewal, area-wide health planning, air pollution control, solid waste disposal, juvenile delinquency prevention, law enforcement and crime control, water pollution abatement, community action, new communities, and other areas designated by the OMB.

The Commission acts as a liaison to encourage cooperation among

all agencies and entities, governmental and private, charged with a substantial interest in the planning or providing of transportation and other public facilities, or in the regulation of such facilities or their services, and the solving of problems dealing therewith.

PORT OF NEW YORK AUTHORITY

The Port Authority was created by a 1921 compact between the States of New York and New Jersey as a financially self-supporting agency capable of developing and operating terminal, transportation, and other facilities of commerce within the two-state Port of New York District. Port Authority projects, which must be authorized by both states, are public projects, but the Authority is denied the power of taxation and cannot pledge the credit of either state. It must raise all capital funds by borrowing money on its own credit.

The Port Authority consists of twelve commissioners who serve without pay, six each of whom are appointed by the Governors of New York and New Jersey. Close and continuous coordination is maintained with the governors and legislatures of the two states regarding policies and activities.

The projects and facilities of the Port of New York Authority fall in the general fields of land transportation, air transportation, water transportation, and world trade. More specifically, these include four bridges and two tunnels linking the States of New York and New Jersey; commercial, general aviation, and helicopter airports, including John F. Kennedy International Airport; rail and bus commuter facilities; marine terminals and other facilities handling the water and land commerce of the Port District and the World Trade Center complex in New York City.

Additionally, the Port Authority has the duty to make recommendations to Congress or the state legislatures with regard to increasing commerce in the Port District, and improving the ability of the port's facilities to accomodate this traffic. In consequence, the Authority is continually engaged in planning studies of future transportation and needed facilities (in cooperation with all concerned public and private parties), and in conducting activities of port promotion and trade assistance through offices in the U.S. and overseas.

APPALACHIAN REGIONAL COMMISSION

The Appalachian Regional Commission is a joint Federal-state partnership concerned with the economic and social development of

the 13-state Appalachian Region. The Commission was created to develop plans and programs authorized under the Applachian Regional Development Act of 1965 (79 Stat. 5; 40 U.S.C. App. 1). These programs include application of land treatment and erosion control measures, reclamation of land damaged by past mining practices, support of timber development organizations, research grants, operation of a comprehensive water resources survey, construction of sewage treatment facilities, amd the supplementation of a number of existing grant-in-aid programs providing for the acquisition of land and the construction and equipment of public facilities.

INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

Congress authorized Maryland, Pennsylvanis, Virginia, West Virginia, and the District of Columbia to enter into a compact providing for the creation of a conservancy district to consist of the drainage basin of the Potomac River for the purpose of regulating, controlling, and preventing the pollution of waters of the Potomac drainage area by sewage and industrial and other wastes.

The Commission consists of three representatives from each state and three members appointed by the President. Major powers of the Commission are as follows:

a. Collecting data, conducting research, and preparing reports on the character, pollution, and condition of streams in the basin;

b. Cooperating with the legislative and administrative agencies of the signatory parties, commissions, and other organizations for the purpose of promoting uniform laws, rules, and regulations for the abatement and control of pollution;

c. Disseminating information to the public regarding stream pollution problems;

d. Cooperating with other organizations engaged in fact-finding and research activities on the treatment of sewage and industrial wastes; and

e. Making, revising, and recommending to the states reasonable minimum standards for the treatment of sewage and industrial wastes discharged, or to be discharged into the streams of the basin.

POTOMAC RIVER BASIN ADVISORY COMMITTEE

This Committee was created in 1965 by the Governors of Maryland, West Virginia, Virginia and Pennsylvania, and the Commissioners of

the District of Columbia.

Composed of three representatives from each of the States and the District of Columbia, the Committee was directed by the heads of the states and Districts coordinate the views of the several basin jurisdicrions on all significant matters pertaining to the Potomac, to convey these views to responsible Federal agencies, and to advise at an early date on the best possible king of permanent organiaation for the planning and development of the Potomac River.

On October 17, 1967, the Committee proposed a draft compact that could create a new Potomac River Basin Commission which would absorb the present Interstate Commission on the Potomac River Basin. While the emphasis of the draft compact is on achieving a basin-wide plan through coordination of state and local efforts, the Commission would be empowered, if necessary, to undertake projects and build facilities, including dams and treatment plants to increase water supply, curb pollution, provide hydroelectric power and flood control, and preserve historic and recreational areas. This proposed compact, in revised form, is discussed at length in the preceeding chapter. As of the end of 1971, it had been favorably acted on by the States of Maryland and Virginia.

POTOMAC RIVER FISHERIES COMMISSION

This agency was established by the States of Maryland and Virginia in order to resolve a series of disputes, sometimes heated, over the use of the Potomac River shellfishery by fishermen of the two states. The Commission assists in the maintenance and optimal use of this resource.

The Commission consists of six members, three from each state. The Chairmanship alternates from year to year between the representatives from Maryland and Virginia.

The powers and duties of the Commission are as follows:

a. making a survey of the oyster beds and undertaking any reseeding and replanting that may be necessary;

b. prescribing the type, size, and description of all species of finfish, crabs, oysters, clams, and other shellfish taken or caught and the places and manner in which they are caught;

c. maintaining a research program;

d. issuing the required licenses;

e. imposing an inspection tax not exceeding 25¢ per bushel

upon all oysters caught within the limits of the Potomac River; and

f. making rules and regulations necessary and desirable for authorizing and regulating the dredging of soft shell clams and levying license fees for such dredging.

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

This Council is composed of representatives of Federal, state, and local governments in the National Capital Region. Federal representatives include the area members of the U.S. Senate and House of Representatives, and state representatives include the area members of the Maryland and Virginia legislatures. All local governments provide representatives, including: the District of Columbia government; Arlington, Fairfax, Loudoun and Prince William County Governments in Virginia; Alexandria, Fairfax City, and Falls Church City governments in Virginia; Montgomery and Prince Georges County governments in Maryland; and Rockville, Takoma Park, College Park, Bowie and Greenbelt City governments in Maryland.

The purpose of the Council is to coordinate and develop solutions to regional problems such as air and water pollution, transportation, water supply, housing and other problems related to a large metropolitan area. The Council absorbed the areawide comprehensive planning functions of the National Capital Regional Planning Commission under Reorganization Plan No. 5 of 1966, and has been designated as the areawide planning agency for the review of all applications for Federal loans or grants to assist in carrying out open-space land projects or for the planning or construction of hospitals, airports, libraries, water supply and distribution facilities, sewerage facilities and waste treatment works, highways, transportation facilities, and water development and land conservation projects.

ORGANIZATIONS OUTSIDE THE N.A.R. STUDY AREA

Although the jurisdictions of the four organizations described below lie entirely outside the North Atlantic Region, their membership includes states which are in the NAR, and to that extent, these bodies represent a facet of the legal and institutional environment of this study.

Ohio River Valley Water Sanitation Commission. The Ohio River Valley Water Sanitation District was created by a 1948 compact among the affected states and the Federal government for the purpose of abating existing pollution and controlling future pollution

of the streams in the Ohio drainage basin. The state signatories include four from the North Atlantic Region; New York, Pennsylvania, Virginia, and West Virginia. There are three commissioners from each state and three representing the Federal government.

The Commission collects water quality data, conducts technical studies and investigations, carries on educational activities, and promulgates water quality standards and regulations. In addition, it has the power to issue orders concerning the abatement of pollution of offending municipalities, corporations, or persons.

Ohio River Basin Commission. This body was established by Presidential Executive Order 11578 on January 13, 1971, under the authority of the Water Resources Planning Act of 1965 (P.L. 89-80). Its membership comprises those states with territory in the Ohio River basin, including New York, Pennsylvania, Maryland, Virginia, and West Virginia, and all interested Federal departments and agencies, and other parties.

The Ohio River Basin Commission's powers and responsibilities are similar to those of other "Title II" basin commissions, viz.: principal coordinator for Federal, state, local, and governmental plans for the development of water and related land resources of the basin; preparation and updating of a comprehensive, coordinated, joint plan for such development by all parties; recommending long-range schedules of priorities for data collection and for investigation, planning, and construction of projects; sponsoring and conducting necessary studies of water and related land resources problems; and performing all other activities, studies, and investigations as are found to be necessary and desirable.

For a more detailed description of Title II basin commissions, see the discussion of the Water Resources Council in Section I of this appendix, and the discussion of the New England River Basins Commission in this section, above.

Great Lakes Commission. This advisory agency was established in 1955 under the Great Lakes Basin Compact, an agreement among the eight states bordering the Lakes. These include the States of New York and Pannsylvania. The Compact also permits inclusion of the Canadian Provinces of Ontario and Quebec, which have not as yet elected to join. There are three to five members from each state, and financial support is provided by equal contributions from each member state.

The Commission serves as a joint forum for the airing of mutual problems concerning the Great Lakes; as a clearinghouse for information, preparing special studies, bulletins, and reports for the use of member states concerning the development of the Great Lakes; and as a coordinator of state views, plans, recom-

mendations, and programs and policies at all levels of government which the states believe to be in the public interest. However, it has no enforcement powers. Major current activities include promotion of the economic development of the region by means of the Great Lakes - St. Lawrence Seaway Waterway system, and resolution of such ecological concerns as use of persistent pesticides, overabundance of alewives in Lake Michigan, sea lamprey infestation, pollution, water levels in the Great Lakes, and comprehensive planning and development of the water and related land resources of the region.

Great Lakes Basin Commission. This body was created in 1967 by Executive Order of the President, pursuant to the Water Resources Planning Act of 1965 (P.L. 89-80). Commission members represent the eight states bordering the Great Lakes, which include Pennsylvania and New York, nine interested Federal agencies, and the Great Lakes Commission.

The Great Lakes Basin Commission's powers and responsibilities are similar to those of other "Title II" basin commissions, viz.: principal coordinator for Federal, state, local, and nongovernmental plans for the development of water and related land resources of the basin; preparation and updating of a comprehensive, coordinated, joint plan for such development by all parties; recommending long-range schedules of priorities for data collection and for investigation, planning, and construction of projects; sponsoring and conducting necessary studies of water and related land resources problems; and performing all other activities, studies, and investigations as are found to be necessary and desirable.

For a more detailed description of Title II basin commissions, see the discussion of the Water Resources Council in Section I of this appendix, and the discussion of the New England River Basin Commission in this section, above.

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